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THE MODERN WALL OF JERUSALEM.

BY HINCKLEY G. MITCHELL.

Tufts College.

1. *Introductory.*

The wall of Jerusalem impresses the most casual observer. To the student it is full of interest, for he sees in it a record of the vicissitudes through which has passed one of the most famous cities in the world.

This remarkable wall became an object of increasing attractiveness to me when, in 1901-2, I enjoyed the privilege of spending several months in Jerusalem as Director of the American School for Oriental Study and Research. I first made a study of one period in its history, that of its restoration under Nehemiah, the result of which was a paper published in the *Journal of Biblical Literature*, 1903, Part ii.

While I was collecting material for that paper I became somewhat familiar with the variety in the masonry of the wall, and it occurred to me to take photographs showing, not only its general features, such as its zigzag course and the gates and towers with which it is adorned as well as strengthened, but also details of size and finish, or lack of finish, among the stones of which it is composed; details which might prove valuable to myself or others in a future discussion of its chronology. If I then had a half formed plan to undertake such a discussion, the lapse of time and the intrusion of "other things" have so far changed my mind that I am now content simply to present my pictures and such other material as I have collected, leaving it to some one who has more leisure and more knowledge of archaeology, but who may not have been permitted to see the actual wall, to interpret them. For the use of Pls. 64, 65, and 66 I am indebted to Professor L. B. Paton.

The treatment now proposed includes a discussion of the general features of the wall, one of which is the irregularity of its course. In the first place, it is an irregular quadrilateral which looks as if its builders deliberately dodged the cardinal points, since none of its sides or corners looks squarely toward one of them. Moreover, in its circuit of almost two and a half miles,¹ except where it coincides with the wall of the Haram, there is not an unbroken stretch of any considerable length.

¹ More exactly, according to the figures given by Robinson, 2.458 miles, measured "as closely as possible," "yet without regarding the short angles and zigzags." The successive posts, as given, *Researches*, i. 395, measure:

| | |
|---------------------------------------|-----------|
| Jaffa Gate to Southwest Corner..... | 1400 feet |
| Southwest Corner to David's Gate..... | 600 " |

The wall varies also in height and thickness, and much more in the former respect than appears above the present surface; for it must be remembered that the present city lies across two ridges each of which is nearly cut in two by a lateral ravine, that the variation in surface of the underlying rock amounts to more than two hundred feet, and that the builders also had to take account of the character of the external terrain. It would therefore be strange if Baedeker were correct in describing the wall as 38½ feet in height.² Indeed, Tobler does scant justice to it when he says³ that "its height is unequal to a considerable degree"; or Robinson⁴ when he sets the lower limit at 20 and the upper at 50, or, at the southeast corner of the Haram, 60 feet; the fact being that the wall at this corner rises 77½ feet above the present surface and its total height is 157 feet 11 inches,⁵ nearly all of which was originally exposed to sight. Toward the northeast corner of the Haram, where the wall crosses the lateral ravine above mentioned, it is about 166 feet high, but at this point only 4 or 5 feet, and at the corner itself only 65, more than now appears, were meant to show above the surface.⁶ Naturally, the wall would be made especially strong where the ground outside, at the northwest corner of the city, for example, favored an attacking force, but less masonry would be required where, as at the northeast corner, it was built on a considerable scarp.

The wall of Jerusalem has eleven gates, including a modern (1889) one at the northwest corner and four, now closed, which formerly gave entrance to the Haram. The remaining six are so placed as to serve persons leaving

| | |
|--|------------|
| David's gate to Dung Gate..... | 1700 feet. |
| Dung Gate to Southeast Corner of City..... | 500 " |
| Southeast Corner of City to Haram Wall..... | 290 " |
| Haram Wall to Southeast Corner..... | 630 " |
| Southeast Corner to Golden Gate..... | 1045 " |
| Golden Gate to Northeast Corner of Haram..... | 483 " |
| Northeast Corner of Haram to Stephen's Gate..... | 200 " |
| Stephen's Gate to Northeast Corner of City..... | 1062 " |
| Northeast Corner to Herod's Gate..... | 1000 " |
| Herod's Gate to Damascus Gate..... | 1200 " |
| Damascus Gate to Northwest Corner..... | 1990 " |
| Northwest Corner to Jaffa Gate..... | 878 " |

The East side of the Haram, according to Conder, *The City of Jerusalem*, 125, measures 1530 feet, the West side 1601, the North end 1042, and the South end 922 feet.

² *Palestine and Syria*, page 31.

³ *Topographie*, 62.

⁴ *Researches*, i. 385, 421.

⁵ *Survey of Western Palestine, Jerusalem*, 146, 148.

⁶ S.W.P., *Jerusalem*, 127, 134. On the southwest corner of the Haram, see Warren, *Recovery of Jerusalem*, 332 f.

the city by the principal streets or approaching it by the natural lines of travel. These six, although they differ in external appearance, are all built on the same general plan, namely, that of a room with two doors, one for ingress the other for egress, so situated as to be at an angle with each other, and thus more difficult for an enemy to pass than a single door or two directly opposite each other. The doors are generally in adjacent walls, so that one is required to turn squarely to the right (2) or the left (3); but in the Damascus Gate, though in opposite walls, they are not directly over against each other.⁷ The following are the gates in their order, commencing on the west of the city and turning to the south, with the width, in every case but one, of the outer entrance:

| | | | |
|--------------------|----------------|----------------|-------------------------|
| Jaffa Gate | 11 ft. 11½ in. | Golden Gate | 31 ft. 11 in. |
| David's Gate | 10 " 7 " | Stephen's Gate | 10 " 10 " |
| Dung Gate | 4 " 5½ " | Herod's Gate | 5 " 4½ " |
| Double Gate (hall) | 42 " | Damascus Gate | 14 " 7½ " |
| Triple Gate (each) | 10 " 1½ " | (New Gate | 13 " 2 ") ^s |
| Single Gate | 9 " 4 " | | |

Five of the gates project beyond the line of the wall, and therefore, although they are little, if any, higher than the wall, they have, at a little distance, the appearance of proper towers, of which there are a considerable number located at irregular intervals about the city. These towers are described by Tobler⁹ as follows: "They are all squares or rectangles at the base. Their width varies from 6 to 24 paces. They project from the wall from 6 to 14 paces." He adds that few of them rise much, most of them but little, above the height of the wall. He counted 34 of these towers. Baedeker copies his figures,¹⁰ but in such a connection as to misrepresent their author, for he gives the impression that this number is exclusive of the projecting gates, whereas Tobler includes them all, three expressly. This seems the necessary interpretation of his enumeration,¹¹ since it is

⁷ This description applies to the gates as built. Two of them, Stephen's and Herod's, have in recent years been altered, the former by cutting a door through the inner, the latter by cutting one through the outer, wall of the tower, to permit carriages to pass in and out.

⁸ For other names by which all these gates, except those in the wall of the Haram, are known, see Baedeker's *Palestine and Syria*, 31 f.

⁹ *Topographie*, 65 f.

¹⁰ *Palestine*, 31.

¹¹ Tobler's figures in detail are:

| | |
|---------------------------------------|------------|
| Jaffa Gate to Dung Gate..... | 10 towers. |
| Dung Gate to Golden Gate..... | 1 " |
| Golden Gate to Northeast Corner..... | 5 " |
| Northeast Corner to Herod's Gate..... | 3 " |

impossible to find ten between the Jaffa and the Dung Gate without counting the latter as well as two in the Citadel, or five from Herod's to the Damascus Gate without including the two by which the latter is flanked. If, now, these five gates be deducted, the remainder will be 28; but, since Tobler seems to have overlooked three of the five between the northeast corner and Herod's Gate, it will be more nearly correct to say 31. Tobler cites Prokesh as placing the total at 40; and this number can be obtained by including all the (seven) ancient gates (with eight towers) and the Tower of David.

Finally, in this connection should be mentioned the flankers, that is the elbows, so to speak, in the wall, by which its general direction is not changed, but space is made, as by towers, for loopholes and battlements from which the besieged can enfilade an attacking party. These half-towers, as Tobler calls them, "project from one to ten paces," the most prominent being those on either side of the northwest corner; and, as there are about twenty of them, they must have added considerably to the strength, as they now do to the picturesqueness, of the wall.¹² See the map.

I might now proceed at once to a description of the masonry of the wall—in fact, I did so in the first draft of my paper; but I have learned that it is impossible to read aright the records in these stones great and small, and appreciate their significance, without more or less knowledge on related subjects. These subjects may be grouped under two general heads, the first dealing with the materials and construction of the wall and the second with its history.

2. *The Wall in the Making.*

Under this head something must first be said concerning the nature of the material used in the wall. The rock underlying Jerusalem and its environs is described by geologists as *cretaceous limestone*, of which there are several varieties. The layer generally nearest the surface is "a hard, reddish-grey, silicious chalk, with bands of flint," called by the natives *mizzi* or *mizzi helu*, and much used in building, especially when strength and durability are desired. It is recognizable by the sharpness of its edges or the clearness of the toolmarks on its finished surface.

Beneath this layer of *mizzi*, which is comparatively thin, there is a thicker one in which the stone is soft and has a rosy-white color, with rare bands of flint. It is popularly called *melekeh*. This is the layer in which have been cut most of the tombs and cisterns in and about the city, the overlying

| | |
|--|-----------|
| Herod's Gate to Damascus Gate..... | 5 towers. |
| Damascus Gate to Northwest Corner..... | 5 " |
| Northwest Corner to Jaffa Gate..... | 5 " |

¹² *Topographie*, 66.

mizzi furnishing the roofs when roofs were an object.¹³ The stone from this layer also is used for building because it is very easy to work, when first quarried, but becomes comparatively hard on being exposed to the air. It never, however, becomes as hard as *mizzi*, and therefore does not retain as long as the latter sharp outlines or fine toolmarks.

Next below the *melekeh* is another layer of hard stone, variegated in color, which comes to the surface near the Convent of the Holy Cross, west of Jerusalem, and which therefore is sometimes called *Santa Croce marble*. It is also sometimes called *mizzi*, the natives distinguishing three varieties, all of which, in spite of their hardness, are used in building, especially for the finer architectural details.

The stone found in the wall of the city is mostly *mizzi* or *melekeh*, but in the later repairs the material used is sometimes a nummulite limestone popularly called *kākūleh*, found in the layer above the *mizzi* where it comes to the surface on the Mount of Olives. It is a soft, yellowish stone containing fossils, less valuable for important buildings than either of the preceding.

It is hardly necessary to emphasize the importance of the matter of the nature of the material employed in the wall. It is clear that stones of different degrees of hardness will not wear uniformly, and that in studying the age of a structure in which such material is employed this fact must not be overlooked.

Reference has just been made to the localities where two kinds of stone, *kākūleh* and *Santa Croce* marble, have been and are obtained. It has also been intimated that the other two, *mizzi* and *melekeh*, are and always have been obtainable everywhere about Jerusalem. The fact is that one cannot go from the city in any direction without coming upon quarries, some of them being in the shadow of the wall, while one is under one of the enclosed ridges; for the fosse along the northern end of the east wall (Pl. 36) and a great part of the length of that on the north (Pl. 43) probably furnished material for the wall itself; and the Cotton Grotto (Pls. 67, 68) and the Grotto of Jeremiah are witnesses to the method by which the ridge which once filled the space between them was removed. There are other quarries in the vicinity; for example, a little way from the northeast corner of the city; in the village of Silwān; on the road to the railroad station; and in front of the Russian cathedral; and there are still others at a little distance, especially in the direction of the tombs of the Judges. See Pl. 70.

¹³ The graves of "Joseph of Arimathea and Nicodemus" (?) in the Church of the Holy Sepulchre are exceptional, being so shallow that in excavating them the workman did not get through the upper layer. See *Ordinance Survey of Jerusalem*, 50.

These and other quarries were doubtless the sources from which stone for the wall, as required for original erection or subsequent reparation, was procured. They reveal the methods employed in procuring it. For example, in the Cotton Grotto the walls are scored with vertical grooves (Pl. 67), which mark the width of stones that have there been quarried. The workman began by cutting downward, with a two-handed pick, two of these grooves, separated from each other by the width of the desired block, and then driving them to a depth equal to the thickness of the same. Finally, he drove wooden wedges into the grooves and kept them wet until, expanding, they forced the block from the wall. There seem to be no indications that any other force was applied for this purpose.

This was not the only method of quarrying among the Hebrews, as appears from the picture of the quarry in the Russian compound, showing a column 40 feet long and 5 feet in diameter, lying as it was left, attached to the horizontal layer of which it had been a part, when the defect in it was discovered (Pl. 69). In this case a different method was employed; partly, no doubt, because so long a stone could be more safely and conveniently handled in a horizontal than in a perpendicular position, but also because *mizzi* was required, and the layer of this quality about Jerusalem was a good deal less than 40 feet in thickness.¹⁴ It seems safe, in advance of positive proof, to take for granted that very large stones were usually, if not always, quarried in this way,¹⁵ and that sometimes at Jerusalem, as at Baalbec, both methods were practiced at the same time in the same quarry.¹⁶

Here, again, it will be worth while to dwell a little on the bearing of the facts discussed on the character of the wall. It is clear that, had the column in the Russian compound been used, as it might have been, in or about the temple, the line of cleavage would have been vertical, and it would have been more apt to scale or split than if the grain ran horizontally. On the other hand, a long block for the wall would naturally be laid on its quarry bed, unless it was thin, when a mason might be tempted to set it on edge, thus securing a larger face, but, as in the case of the column, one less resistant to wind and weather.

There is more to say about stones quarried by the vertical method. They seem generally to have had the form of slabs. One in this form might be used as a whole, in which case it would naturally be laid lengthwise in the

¹⁴ Hull, *DB*, art. *Geology*, says only 16 feet.

¹⁵ Maudslay's Scarp, so-called, in the Protestant Cemetery, to judge from the lines on the face of it was produced by the same process. See Bliss, *Excavations at Jerusalem*, 12 f.

¹⁶ In the quarry at Baalbec may be seen to this day the greatest block of stone (71 x 14 x 13 feet) man ever attempted to utilize, lying half-freed from its sloping bed, and, near it, two smaller ones, separated from each other by a workman's pick, but left standing fast on their original foundation.

wall, on one of its four sides; but, in whichever way it was laid, the grain would have a vertical direction.

Large stones quarried by either of these methods were doubtless sometimes broken into two or more pieces, or such small blocks taken directly from the quarry. They might be laid in many different ways, in some of which the grain would run horizontally. One of these latter would be chosen by the intelligent and conscientious workman. The fact that they are not all laid in this way is pretty good evidence that all the masons who wrought on the wall did not possess both of these characteristics.¹⁷ See Pl. 35.

Some of the stones now in the wall were delivered to the masons and put into their places as they were broken from the living rock, or, at most, after the removal of ugly or inconvenient protuberances; but many more had first to pass through the hands of the stonecutter. One naturally wonders where and how the work on them was done. In 1 Kgs. 6:7 the statement is made that the temple "was built of stone made ready at the quarry, and there was neither hammer nor axe nor any tool of iron heard in the house while it was in building." This statement, being an editorial addition to the passage in which it is found, is of doubtful value for the time of Solomon, but it may be taken as evidence concerning the practice of the editor's day. It is therefore probable that some, at least, of the stones of the present wall were finished at the quarry. Perhaps this inference is strengthened by the fact that, when Warren was excavating about the Haram, although he was continually annoyed and sometimes temporarily thwarted, in his operations by what he calls "shingle," he says in one of his reports¹⁸ that the small stones of which the shingle consisted were "not long chips, but cubical or nearly hemispherical"; and in another¹⁹ that they were "in many cases rounded and unlike what would result from stonedressing, having more the appearance of the backing used in the walls at the present day in Palestine."²⁰

¹⁷ Perhaps it is worth while, in this connection, to mention a matter of statistics. Warren in the course of his excavations about the Haram sank twelve shafts between Wilson's Arch, on the west side, and the northeast corner, and measured 195 times the courses above and below the surface. The average thickness of the stones measured was 3 feet 7.95 inches, there being 65 less than 3½, but only 7 less than 3 and only 4 over 4 feet thick. A favorite figure is 3 feet 9 inches, which occurs thirty times.

¹⁸ *Recovery of Jerusalem*, 58 f. See also 176.

¹⁹ *Recovery of Jerusalem*, 144.

²⁰ There is very little, in the reports on the excavations made at Jerusalem, on the backing used in its wall, but Wilson, in *Ordnance Survey of Jerusalem*, 26, says of stones at the southeast angle of the Haram that they "form a species of ashlar-facing to a mass of rubble"; in which perhaps he had in mind the spot shown in Pl. 26, a picture copied from a photograph taken well back toward his time.

The question just raised might have been omitted, since it could make little, if any, difference in the wall where any of the stones composing it were finished; but there remains a point which is of some importance. It has to do with the posture of the workmen who dressed the stones. An occidental stonecutter blocks up the stone which he has to dress and stands over it while he plies his tools. Now, it is not the custom in Palestine to stand while doing anything which can be done sitting. Thus, not only do women wash, spin, etc. on the ground, but men, as is shown in Pl. 71, contrive to cut stone after a fashion in the same posture. One would think it very uncomfortable for the workman, and preventive of such good work as he could do while standing over the stone and moving freely about it. This being a plausible supposition, if, as the persistence of the customs of the East seems to warrant one in believing, the workmen who dressed stone for the wall of Jerusalem also sat, when they could, at their work, the question arises whether there are not peculiarities, irregularities, etc., especially in the finish of the smaller stones, which can be explained by the posture of the workman.

3. *The Wall in its Vicissitudes.*

In the preceding pages attention has been directed to the more influential conditions under which the limestone underlying Jerusalem and its environs was transformed into a means of defense which was at the same time an ornament to the city. But the wall, in its original extent and character, had hardly been completed before it began to be attacked by forces the effect of which, sometimes by slow and sometimes by more rapid processes, would be to mar and eventually to destroy it.

Among these hostile forces, of course, are the elements; but it is not necessary to go into a detailed description of the effect on limestone of meteorological phenomena with which men everywhere are familiar. There is, however, one peculiarly effective agency of this kind, the sirocco, which should not be passed over in silence.

The city of Jerusalem, being situated on a ridge, parts of which are here more than 2500 feet above the level of the sea, is naturally exposed to every wind that blows. Some of them in time do more or less damage to any structure, even of stone. This is true of the west or northwest wind, in winter, with its clouds and rain, but especially of the dreaded east or southeast wind, which oftenest blows in the early fall, usually for from one to three days, but sometimes much longer.²¹ It frequently brings only almost intolerable heat, intensified by reflection from angry, threatening clouds, from which man and beast seek the nearest shelter. See Is. 25:5. In its

²¹ Grant, *Peasantry of Palestine*, 25 f.

most vehement form it is a roaring hurricane, laden with dust and sand, which it hurls at any barrier in its course with a force that rends and rives trees and carries everything movable before it.²² It is evident that, in the study of the wall, the possible effect of this periodical sandblast must be recognized as an important element in any chronological calculation that may be attempted.

Wind and weather are not the only natural forces from which the wall has suffered. Palestine, it must be remembered, is a volcanic region. From time immemorial, therefore, it has at intervals been visited by earthquakes, some of which have been very destructive, especially on the seacoast and in the Jordan Valley. The elevated backbone of the country has been shaken less frequently and disastrously, but there have been shocks even in this region by which not only walls and buildings, but men and animals in large numbers, have been destroyed. The Old Testament gives abundant testimony to the familiarity of the Hebrews with these visitations. Amos speaks of them as a recognized form of divine chastisement (4:11), and he and others predict their recurrence for this purpose. See Am. 2:13 ff.; Zeh. 14:4. It was an earthquake by which, according to 1 Sa. 14:15, Yahweh supported Jonathan's valorous adventure among the Philistines at Michmash; but the one that seems to have made the deepest impression is that "in the days of Uzziah," doubtless the same that is cited in the title to the book of Amos as well as in Zeh. 14:5.²³ Among those of earlier centuries which are known to have disturbed Jerusalem and its wall are those of 362, 746, 1016, and 1034 A. D. The damage done by the last to the walls of the Haram was immediately repaired by the Caliph Az-Zāhir, as recorded in a mutilated inscription on the battlements near the southeast corner.²⁴ The other earthquakes, or the repairers after them, doubtless left traces, but they are not so easily located.²⁵

The ravages of natural forces have doubtless been serious, but the agents whose work on the wall is most marked and confusing were men who, in the successive generations, wrecked or rebuilt and extended it.

The hands of these men appear in the changes that have been made in the course of the wall. The fact is that the present wall is the relic of a system which, as time passed, had to be adapted to the size and convenience of the population. The first of this system of walls was the one which

²² Jer. 4:11; Thomson, *The Land and the Book*, ii. 262.

²³ Josephus (*Antiquities*, ix. 10, 5) connects it with the invasion of the temple by the king (2 Ch. 26:19), and gives it a description evidently suggested by Zeh. 14:4.

²⁴ De Vogüé, *Le Temple de Jérusalem*, 77; LeStrange, *Palestine Under the Moslems*, 101.

²⁵ Bliss found what he was inclined to consider the work of an earthquake in a tower which he excavated (*Excavations*, 77). Perhaps the defect in the rejected column in the Russian compound is another example. The workmen would hardly have gone as far with it as they did if the defect could have been seen when they began.

encircled the ancient city of Jebus. That city, it is now pretty generally conceded, occupied the southern end of the eastern of the two ridges across which the walled city now stretches, its site having been determined by the location of a spring, the Gihon of 1 Kgs. 1:33, now called the *Spring of the Steps* or the *Spring of the Lady Mary*, on which the people depended to a greater or less extent for water. The population of the city must have increased rapidly after David captured it and made it his capital. At any rate, Solomon, in his reign, was obliged to extend its limits, not only toward the north, where he had erected a temple for Yahweh, and for himself a group of palaces, but also toward the west, where there had grown up a flourishing suburb. See 1 Kgs. 3:1. In process of time the whole of the southern end of the western ridge became a part of the city, with a north wall running from a point near the present citadel to the precincts of the temple, the so-called First (north) Wall.

Later there grew up, across the ravine on the other side of this wall, another suburb, around which in due time was thrown the so-called Second Wall, whose eastern end extended to the northeastern corner of the temple precincts. This must have been built before the reign of Ahaz, for one of the first things done by this king was to connect the Upper Pool, now sometimes called the Pool of Hezekiah, with the one at the head of the Valley of Hinnom the modern name of which is the Pool of Mamilla;²⁶ and there would have been no object in so doing if the Upper Pool had not then been inside the city. Indeed, there is ground for believing that this second wall was of a considerably earlier date, since in 2 Kgs. 14:13 Jehoash, king of Israel, is reported to have broken down the wall "from the Gate of Ephraim to the Corner Gate, four hundred cubits"; and the Gate of Ephraim was in the First Wall, but the Corner Gate, according to Je. 31:38, was at the northwest corner of the city of the prophet's day, and therefore in the Second. In other words, the Second Wall must have been built as early as the reign of Amaziah (799-771).²⁷ It is also probable that, since in Is. 8:6 there is a reference to the Siloam Tunnel, this work should be credited, not to Hezekiah, as it is in 2 Kgs. 20:20 (comp. 2 Chr. 32:30), but to an earlier king; as also the extension of the limits of the city to include the southeastern end of both ridges and the whole of the intervening Tyropoeon Valley. These errors in the Jewish annals may be explained as result of a pious prejudice in favor of Hezekiah of which they are not the only indications.

It was a long time, about eight centuries, after the building of the Second Wall, before a Third was needed; but finally, "as the city became more prosperous, it gradually outgrew its old walls," and Agrippa I. undertook

²⁶ See Is. 7:3; also 36:2.

²⁷ For a more extended discussion of this point, see *Journal of Biblical Literature*, 1903, 136 f.

to enclose the new northern suburb with a wall; which, however, was not finished until the great revolt in which the Jews as a nation perished, and then was completed on a much more modest scale than the king had intended.²⁸

The area of fortified Jerusalem has sometimes since been less, but never greater, than it was under Agrippa I. When it was restored, under the name Aelia Capitolina, by Hadrian, its defenses were simplified and contracted, the First and Second north walls being eliminated and the south wall carried across the top of the western ridge, as it is to-day.²⁹

Bliss seems to have shown that this was its course for at least two centuries, that is, until 333 A. D.,³⁰ but that before the end of another century the whole of the top of the southern end of this ridge had been enclosed, and within a few years (449-460) a new south wall, following practically the old lines and including the Pool of Siloam, was built by the Empress Eudocia, who thus restored the city to its largest dimensions.³¹

The next change is supposed to have been made just before the taking of the city by the Crusaders, when the line of defense chosen by Hadrian was again adopted;³² but according to Bliss the top of the southern end of the western ridge was again taken inside the city, probably toward the middle of the thirteenth century, as represented on a map published in 1321. Finally, however, for the third time, the short line was adopted, and this is the course the wall has taken from the fifteenth century to the present day.³³ The last restoration of the wall as a whole, according to the inscriptions at various points commemorating it, was undertaken in 1536 and finished in 1539.³⁴

²⁸ Josephus, *Wars*. v. 4, 2; vi. 6, 2.

²⁹ Bliss, *Excavations*, 305 f.

³⁰ *Excavations*, 306.

³¹ *Excavations*, 307 f.

³² *Excavations*, 310 f.

³³ *Excavations*, 311 f.

³⁴ Tobler, *Topographie*, 77 ff. The date given by Robinson (*Researches*), which has been copied by Richter and others, is 1542; according to Tobler, it is based on a mistaken reading, 948 for 945 A. H., in the inscription over the Jaffa Gate. Tobler himself claims to have had all the inscriptions translated for him by the official interpreter of the Prussian consul of his time. The date given in one of them, of which he quotes the translation, is that on which the repairs were "commanded and ordained," and this is probably true of the others. The result in detail is as follows.

| | | |
|-----------------------------------|-------------------|-----------|
| Over the Damascus Gate | the date is June, | 944 A. H. |
| Third Tower west of NE. corner | " " | " " |
| At the Northeast Corner | " " | 945 " |
| At Stéphen's Gate | " " | " " |
| Over the Jaffa Gate | " October, | " " |
| Between the Dung Gate and David's | " " | 947 " |
| Over David's Gate | " July, | " " |

This historical résumé has in it suggestions for the student of the modern wall. Naturally, while the city was growing along the lines of approach, the additions to its defenses, like the original wall, would be built of newly quarried, and newly finished, stone; for example, the so-called Second and Third walls.³⁵ On the other hand, when the city was shrinking to smaller dimensions and a line of defense was to be shortened, the material for the new wall would be sought in the abandoned outer one. These stones may or may not now be recognizable; for, if they were originally large, they may have been broken up for more convenient transportation, or they may, as wholes or in parts, have been refinished.

Similar problems have been produced by the alternate wreckage and reparation to which the whole or parts of the wall have been subjected. The simplest case would be one like that when Uzziah rebuilt, and that probably almost immediately, those four hundred cubits at the northwest corner which Jehoash of Israel had thrown down. See 2 Kgs. 14:12. Had the breach been neglected for any length of time, the restorer might not have found the materials needed so ready to his hand, but have been obliged to provide new stone for the purpose, as no doubt others under different circumstances had to do; not always, however, for when Nehemiah undertook to restore the entire wall, it had lain in ruins nearly a century and a half, yet few of the stones overturned were missing, otherwise he could not have finished the work in the astonishingly brief space of fifty-two days. See Neh. 6:15. Naturally, restoration of this sort leaves few traces, except perhaps in an increased number of small stones, some of them, as above suggested, from larger ones broken into pieces. Compare the south wall as restored by Eudocia, with its new stones and new styles of finish.³⁶

These suggestions might be multiplied; but enough has been said on the subject for the present purpose, and we will now proceed to a closer inspection of the wall as it was when my photographs were taken.³⁷

4. *The Masonry of the Wall.*

One cannot give the wall very close attention without being struck by the variety in its masonry. Merrill³⁸ describes nineteen kinds distinguished by differences in size, shape, or finish, or all of these features; and his list is not exhaustive. In fact, about all the possible varieties, within certain limits, are represented, some by comparatively few, but many by any number of examples.

³⁵ On the Third, see Josephus, *Wars*, v. 4, 2.

³⁶ Bliss, *Excavations*, 24 ff.

³⁷ Note that the pictures are all numbered and that the part of the wall, or other related subject in the vicinity of Jerusalem, in each case is marked on the accompanying map by a corresponding number.

³⁸ *Ancient Jerusalem*, 384 ff.

In the first place, although the wall is, for the most part, built of stones with some kind and degree of dressing, there are many on which no traces of a finishing tool are discernible. Stones of this general class are of several varieties, according to their size and the prominence of their unwrought fronts. The most noticeable, of course, are the larger ones, whose rough and bulging outlines project more or less prominently beyond the line of the wall. The largest occur at the corners in the courses next to the ground. See Pls. 10, 11. There are doubtless many of the same kind below the surface which have never been uncovered. They are often mixed with large drafted stones having rough and prominent bosses, especially in both directions from the northwest and southeast corners of the city. There are also some to be seen elsewhere. Sometimes they are roughly squared, but quite as often they seem not to have been in any degree fitted for any particular place in the structure. Stones of this kind, but smaller, are found higher up in the wall, but seldom in the two or more courses of the battlements. They are frequent with the ashlar of one sort or another, especially in the north and east walls. See Pls. 37 to 41. The distinction between large and small is here made for convenience only. It is not in itself one to which it is safe to give any great degree of importance, since it can be shown that some of the smaller stones are fragments of larger ones which were broken up to make it easier to handle them.

The unwrought stones in the wall are not all equally protuberant. There are many with faces comparatively flat, as if produced by splitting along the natural lines of cleavage characteristic of limestone. Indeed, this is in some cases the explanation of their flatness, or, to put it differently, they present flat faces because they are laid, not on the natural bed, but on one at right angles to it. They are generally small and not far from square in their superficial dimensions. The best specimens are found in the southern part of the west wall, where there are many mixed with drafted stones with unfinished or rather roughly finished centres. For largish specimens, see Pl. 48; for smaller ones, Pls. 4, 5, 8, etc.

The amount of unfinished work in the wall is no doubt considerable, but its amount may easily be exaggerated, because the tooling on many of the dressed stones, always unobtrusive, has by time and the elements been almost obliterated. The fact is, that when one undertakes a careful examination one is liable to change one's mind and become impressed with the amount and variety of the toolwork represented.

The wrought masonry will require more extended description. But before entering upon this subject something should be said about the tools

used by the Hebrews, that the terms employed may be understood and the distinctions made be appreciated.

It is taken for granted by those who have dealt with this subject that the tools of the stonecutters of Palestine in the past were practically the same that are now used in that country.³⁹ The most important are:

1. A heavy *hammer* for rough work, used also in the quarry.
2. A *point* or *chisel-pick*, a pointed tool in various sizes, driven with a curved hammer having oblique faces, and used in taking down the surface of a stone or giving it a grooved or pock-marked dressing.
3. A *pick*, a heavy tool, pointed at both ends, with a handle inserted in the middle. It produces a dressing similar to that of no. 2, but "shallower and more delicate."
4. A *bush-hammer*, whose two faces are furnished with teeth, those of one end being coarser than those of the other; a multiple point or pick.
5. A *plain chisel* in various widths.
6. A *toothed chisel* with teeth of various sizes, used in taking down rough surfaces.
7. A *comb-pick*, a kind of adze, with two edges each of which consists of a row of five or more teeth to the inch. This also has a handle like the pick, and like the latter is used for a final dressing.⁴⁰

The stones which cutters of various periods, by the use of the tools above described, wrought for the wall may be divided into three classes:

The first of the three includes stones of but one description, which, since they show no actual toolmarks, one would incline to refer to the unwrought class. On nearer inspection, however, they exhibit a regularity beyond that of being simply squared. In the first place, although they are mostly comparatively small, they all project to some extent, but the amount of their projection is noticeably moderate, and the bosses thus formed present a regularity of outline which can hardly be natural. In short, they are quarry-faced stones from which ugly angles and protuberances have been removed. They sometimes occur singly, but they are usually found mixed with more finished ashlar of about the same dimensions, especially at various points in the north wall and the northern part of the east wall. See Pls. 2, 38, 39, 40, 41.

The second of the three classes above mentioned consists of drafted stones. By drafted stones are meant those, large or small, whatever their

³⁹ So, for example, Dickie, in his paper on *Stone Dressing Past and Present in Jerusalem*, in the *Quarterly Statement* for January, 1897; quoted by Bliss, *Excavations*, 271 ff.

⁴⁰ For the native names of most of these tools and other details concerning stonecutting in Palestine, see Grant's *Peasantry of Palestine*, 152 f. For the shapes of nos. 2, 3 and 7 see Bliss, *Excavations*, 272. A bush-hammer is pictured on the ground in Pl. 71.

other marks, which have a margin, broad or narrow, deep or shallow, worked by one of the tools used for that purpose. They are of three general kinds distinguished by the toolmarks on their margins.

The rudest style of finish for the draft or margin is that produced by the chisel-pick.⁴¹ It is found on stones large or small, with centres rough or dressed in a variety of ways. There is, first, the large block with a rough boss. Dickie⁴² reports this combination rare in the ruins of the old south wall found, in fact, but once *in situ* (Pl. 61); but he remarks incidentally that "the boss and margin stones in the lower courses of the wall projecting from the Haram area are similarly dressed although of much larger proportions, and some of the stones built into the present south wall of the city are of this class." He might also have cited the great stones in the course next to the ground on the east side of the Haram, just south of the tower at the northeast corner, and the lowest three just south of the Golden Gate, which are noticeable for their massive roughness.⁴³ See Pls. 29, 33. They are not common elsewhere, but there are some in the south wall, especially east of the Dung Gate (Pl. 37). A very good specimen may be seen just inside the Damascus Gate, east side, where, of course, it is not *in situ*. See Pl. 54; for smaller ones, 10, 37. Dickie notes that all those which he had seen were of *mizzi*, and suggests that the hardness of this variety of limestone may explain the choice of the tool used.

There are also stones with picked margins whose bosses are dressed with the same tool; but not always in the same way, for the chisel-pick leaves a pockmark or a furrow, according to the angle at which it is held. For specimens, see Pls. 10, 37, and note that they are found with stones of about the same size having rough bosses.^{43a}

The stones with picked margins thus far described have more or less prominent bosses. There are others the centres of which are so low that they can hardly be termed bosses. In some cases these centres are unwrought (Pl. 5), in others picked, like the margins. See Pl. 10.

A second style of margin represented in the wall is that produced by the

⁴¹ This is the name for the *point* used by the English excavators and therefore preferred for this paper.

⁴² Bliss, *Excavations*, 279.

⁴³ It should be noted that these last are not *in situ*, for (1) they differ in important particulars, style of draft and height of boss, from the rest of the rough and heavy masonry of the east wall of the Haram; and (2) none of the rest of the masonry of this kind is, or was, intended to show above ground. See *Recovery of Jerusalem*, 324. On the other hand, they answer so well to Warren's description of the stones in the wall of which he found remains forty-six feet east of the Golden Gate that he was struck by the resemblance. See *Recovery of Jerusalem*, 158. It is therefore a reasonable conjecture that they came from that source.

^{43a} Dickie mentions that in the walls of the castle at Bāniās there are stones with picked margins whose bosses "show rough toolmarks." Bliss; *Excavations*, 276.

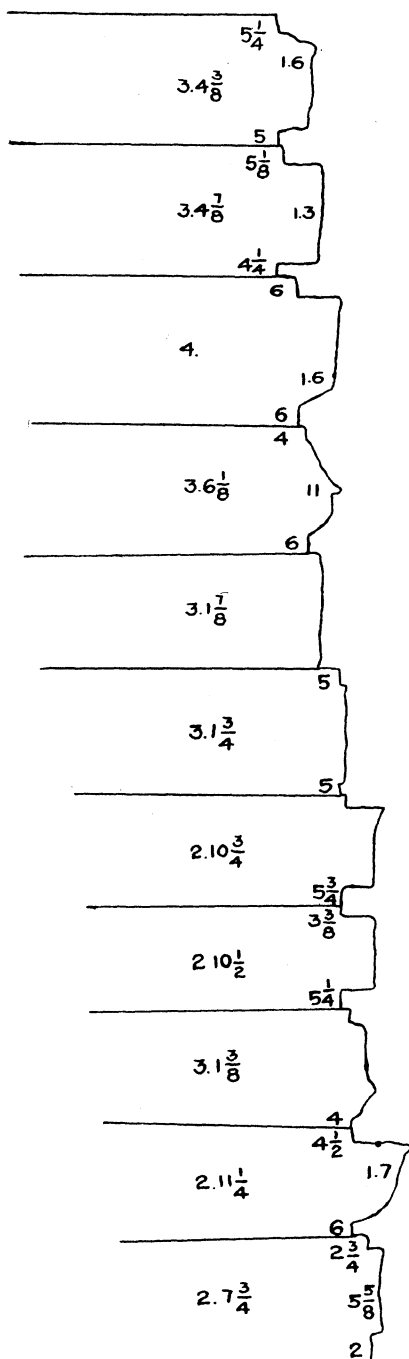
comb-pick or the toothed chisel, which is found in a larger variety of combinations than the picked draft. First, it is seen on some of the largest stones framing rough bosses, in the course, or courses, next to the ground, notably in both directions from the northwest and southwest corners of the city. See Pl. 47; also the ruins of Goliath's Castle, Pl. 55.⁴⁴ The number in sight, however, is small compared with the multitude discovered by excavators, especially Sir Charles Warren, to whom we are indebted for much of our knowledge of underground Jerusalem. His descriptions of the drafted stones which he found at the foundation of the Haram wall, from Barclay's Gate on the west to the Double Gate on the south, and, in the east wall from a point 105½ feet north of the southeast angle to the northeast corner, and 75 feet beyond, are, it is true, sometimes rather vague, yet it seems safe to suppose that he refers to the kind now under discussion. Thus, of those about the southwest angle he says, that they are "most beautifully" drafted; and again, that "their joints and marginal drafts are quite as perfectly wrought as those to be found on the stones whose faces are finely worked";⁴⁵ that is, as he expressly says of those at the Wailing Place, "with an eight-toothed chisel."

These large stones are not all equally large, nor are their recognized characteristics invariable. They vary considerably in length, but not so much in thickness. Warren found the average thickness of those in the south wall of the Haram, 213 feet from the southwest angle, 3 feet 8+ inches, but of those at the northeast corner 3 feet 4+ inches. There is a difference, too, in the margins as between different stones and different sides of the same stone. Thus, at the southwest corner the width is from 4 to 6 inches, but at the northeast it is sometimes 7¼. Finally, the bosses vary even more decidedly; for, while at the southwest corner the greatest thickness is 18 inches, at the northeast it is 26½; and the difference in outline almost justifies Warren's dicta, that the rough stones at the southwest corner "differ entirely from any in the east wall," and that those at the northeast angle present "a very curious appearance."⁴⁶

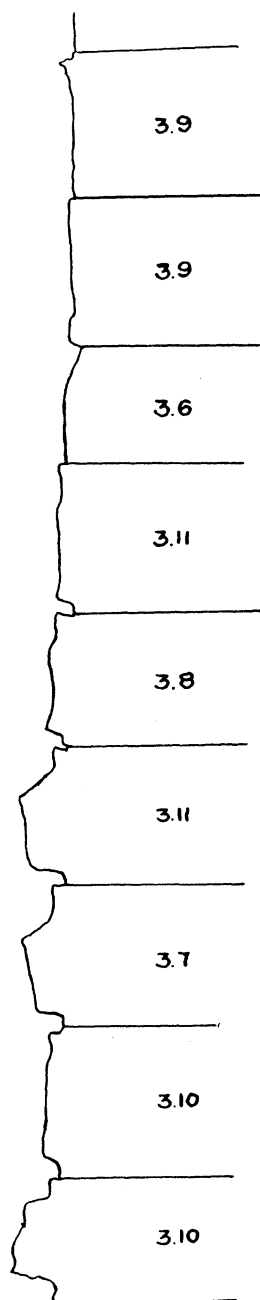
⁴⁴ Merrill (402) claims that "no people ever succeeded in imitating" what he incorrectly calls "the Jewish bevel"; but Dickie (Bliss; *Excavations*, 276) says it is found "in the wall abutting on Hadrian's Arch at Athens," and Conder (*City of Jerusalem*, 91) declares that such masonry was not known in Palestine, or even Phoenicia, before the Greek Period.

⁴⁵ *Recovery of Jerusalem*, 125.

⁴⁶ The figures for the southwest corner, which are taken from *Recovery of Jerusalem*, 127, are not exact; for those for the northeast corner, see the Plates accompanying the Jerusalem volume of the *Survey of Western Palestine*. Comp. *Recovery of Jerusalem*, 167, 324. On p. 127 of the latter work the statement is made, that the rough stones near the southwest corner "appear as when they were brought from the quarries, roughly dressed in three faces." The last clause is of doubtful meaning. If interpreted by



Profile of Stones at NE. Corner.



Profile of Stones at SW. Corner.

A word should be added by way of explanation of the striking prominence of the bosses in the masonry now being considered. It has been held that stones of this kind were a better defense against battering-rams than plain-faced ones, and that they were used in the wall of Jerusalem for that reason; but this theory will not do in the present case, for, to mention only two objections, (1) the roughest of this rough work is on the east side of the Haram, where, owing to the nature of the ground outside, an enemy would be least likely to attack the city and the use of battering-rams would be most difficult; and (2) the rough work at and about the southwest corner is all below a pavement marking the extent to which the adjacent ground had been, or was to be, raised when this part of the wall was erected.⁴⁷ From these two facts it seems safe to infer that, in the parts of the wall to which they apply, the masonry was left in some respects unfinished because its rudeness was to be hidden underground. Beds and joints, however, especially about the southwest angle of the Haram, were not slighted. Two or three further facts render it doubtful if the largish stones with less prominent bosses which are found above ground in various parts of the wall were always, if ever, regarded as particularly strong defensive features: (1) There are long stretches of the wall in which there are none of these stones; (2) in places where they are found they are not so used as to offer the greatest resistance to battering-rams; and (3) there is a tower at the eastern end of the old south wall in which "chisel-picked stones and rough bossed stones" are "placed indiscriminately,"⁴⁸ apparently for the sake of variety.

The drafted masonry thus far considered has been of the heavier character. There are many comparatively small stones with rough bosses, and some of them, although it does not happen to show in the photographs taken, must have comb-picked margins. A few with margins of this kind have bosses roughly trimmed with the chisel-pick. See Pls. 12, 37; also 23, showing pillars in "Solomon's Stables," built of stones which perhaps originally had their places in the wall; also 59, showing a pile of stones found during the excavations for the foundations of the English School, and 63 showing the ruins of a building at Kaloniyeh, the corners of which were built of cut stone. In Pl. 10 is seen one which was first, or partly, drafted with a comb-pick, but finally finished with a plain chisel.

p. 122, where the same kind of stones are described as having "rough-picked faces," it would seem to be at variance with the clause preceding; also, and more clearly, with the profile of the stones first described, 90 feet from the southwest angle, in the Plates illustrating the Jerusalem volume. This profile is here reproduced with one showing the shapes found in the tower at the northeast corner, that the reader may judge whether the stones of the former look as if they had "picked faces," and how much they differ from those of the latter.

⁴⁷ *Recovery of Jerusalem*, 122.

⁴⁸ Bliss, *Excavations*, 94 f.

The bosses on the varieties of drafted stones with a combed finish thus far considered are of various heights, but this difference does not seem to warrant further division. There are, however, stones of which the centres, though rough, are not high enough to be called bosses. These may properly be regarded as a separate variety. They are generally, as in the southern part of the west wall, found with others of about the same size, but with picked centres. See Pl. 6.

The latter style of masonry was a favorite with the Hebrews. At any rate, Bliss found it in the oldest sections of the old south wall in his excavations. The specimens there uncovered he describes as follows: "Here we have the most beautifully set work we have observed anywhere in our excavations. The fine rubbed jointing is superior to any ever found in Jerusalem, and is so close that a pin-point can hardly be inserted. The stones are perfectly squared and set without mortar. A few have centres projecting not more than $\frac{1}{4}$ inch. The broad margins, which are worked fine and smooth, are carefully comb-picked, while the centres are pick-dressed."⁴⁹ Later⁵⁰ he quotes Dickie as referring this piece of masonry to the date of what are called in 1 Kgs. 7:9 "costly stones." For further specimens in the present wall, see Pls. 37, 54.

At the Damascus Gate, and now and then elsewhere, the picked centre is emphasized by a shallow groove separating it from the combed margin. See Pl. 45. This attempt to improve upon the original style cannot be pronounced a success, but for an example of utter lack of skill and taste, see Pl. 29.

The most interesting masonry with the combed margin remains to be examined. For a good specimen, see Pl. 25, below. It is in the south wall of the Haram near the eastern end. The draft is slightly sunken, and inside it, barely visible, is a border about two inches wide done with the same tool. Within this border the surface is finished with a shallow picking more "carefully and delicately executed" than is usual with this kind of dressing. The tool used is generally supposed to have been the point, that is, a single-pointed chisel, but a practical stonecutter to whom the photograph was shown at once declared that it must have been something like a bush-hammer, and since a tool of this kind (*shāhūteh*) is actually among those now used in Palestine (Pl. 71),⁵¹ there is something to be said for this opinion.

The masonry of the Haram at Hebron is of precisely the style represented by this stone. See the *Quarterly Statement* for 1882, p. 197, where the former is described as follows:

⁴⁹ *Excavations*, 30.

⁵⁰ *Excavations*, 277 f.

⁵¹ Grant, *Peasantry of Palestine*, 153.

“A draft 4 inches in width and $\frac{1}{2}$ inch deep, wrought with an adze or fine-toothed instrument.

An inner border 4 inches wide wrought with a similar tool.

A centre finished with a pointed instrument struck with a mallet.

An average height in the courses of 3 feet 7 inches.

An extreme length in the stones of 24 feet 8 inches.”

Warren, who examined the southeast corner of the Haram to the foundation, reports⁵² that the wall is of one style to the bottom, a distance of 80 feet 5 inches, that, except in a few cases in the lowest courses, to which he calls attention, the stones “differ in no wise from the perfect specimens above ground.”⁵³ Note the plural “specimens.” It implies that the large and finely dressed stones above ground are all of a kind, that is, all have combed margins and picked centres. At first sight this seems to be true, at least of those in Pl. 25; but, when they are carefully examined, it appears that the one at the upper left-hand corner has not only combed margin but a centre dressed with the same tool or a toothed chisel. We have, then, here two varieties of stones with a combed margin, and, since Warren was evidently not looking for the difference that distinguishes them, it is probable that there are others of both kinds under ground—and, for that matter, above it—which escaped his attention.

The discovery just made suggests the advisability of applying the magnifying-glass to the photograph of the Wailing Place, where the masonry has always been regarded as of the same order as that of the southeast corner; also to that of the northeast corner, where, according to Warren, the style is the same, but “the chisel-work is not so well done.”⁵⁴ The result in the former case is to find that the four stones shown in Pl. 15 have double margins, which appear to have originally been finished with the comb-pick, but to have been largely worked over with the plain chisel. Unfortunately the stones shown in Pl. 34 are so weathered that the toolmarks on their margins do not show in the photograph, and my notes are as silent as Warren on the subject.

Warren takes pains to note the difference between the rough stones at the southwest and those at the northeast corner of the Haram, but he mentions no peculiarity of those with finished centres at either point as compared with each other or with those at the southeast angle. Pl. 17 presents a group from the southwest corner, which may be compared with that of Pl. 25. It will be seen that they are not so large as those at the southeast corner, and

⁵² *Recovery of Jerusalem*, 135 ff.

⁵³ The exceptions mentioned are chiefly instances of irregularity in the margins, the range, toward the bottom, being from 0 to 16 inches, whereas elsewhere the average is between 3 and 4. See *Recovery of Jerusalem*, 138, 148.

⁵⁴ *Recovery of Jerusalem*, 167.

that the margins are slightly deeper; but that the inner border is not as thoroughly carried out. In the matter of tooling there is the same lack of uniformity as at the southeast angle; for, while all of these stones have picked centres, only one of them (left, below) has a combed margin and inner border, the others showing the marks of the plain chisel. Thus, the net result of an examination of the great dressed stones about the Haram, so far as they have combed margins, is that there are two varieties, one with a picked, the other with a combed centre.

In the course of the examination of these large dressed stones mention has twice been made of another type of drafted stones, namely, one in which the drafting tool is a plain chisel. There are no large stones of this type, with rough bosses, shown in the photographs of the present wall, but Bliss found them in the buttresses supporting the wall across the Tyropoeon at its mouth. See *Excavations*, 105, where, in describing one of these buttresses, he says: "The bases project from 1½ to 6 inches, the margins are worked by chisel draft, but in a very few cases, on the stones last discovered, the comb-pick has been used." Here, also, according to Conder, belongs the masonry of Goliath's Castle, so called, where, however, the marks of a toothed chisel are distinctly traceable. See p. 30.

The small stones with plain drafts and rough bosses are very numerous. They are of two kinds. First, there are those with a noticeably narrow margin. Indeed, it is sometimes so narrow that it might be made the mark of a distinct variety, line-ashlar, between those on which no toolmarks appear and those which have an unquestionable margin. On the former, see p. 24 f. They all have quarry faces and are generally found in groups or courses, especially in the north wall and the northern end of both the east and the west wall. See Pls. 2, 3, 11, 22, 38, 39, 40, 41.

Quite distinct from this ashlar of the narrow draft is a variety which has wide and irregular margins and a correspondingly small and sometimes misshapen boss. It differs from the former also in that it includes stones of various shapes and sizes. For specimens see Pls. 2, 3, 18, also 64, a picture of the part of the walls of Mar Saba.

In a few instances the plain draft is found with a more or less irregular picked boss. For a strange assortment of stones of this kind, some of which seem to have been worked over, see the east side of the Tower of David, Pl. 52. One showing a margin partly recut has already been cited, see p. 34.

A very different grade of work is found on the west side of the citadel and at the top of a little tower on its south side, where portions of the wall consist of stones of varying length, having a narrow draft, apparently

finished with a plain chisel, on the lower side and one end, and a boss dressed with a fine point or a bush-hammer. See Pl. 3.

Here belong, also, the small stones with low, square bosses at the top of the wall back of the southwest corner of el-Aksa (Pl. 18), if, as seems to be the case, both have the finish of the plain chisel.

There remains to be noticed the most numerous variety of masonry drafted with the plain chisel, namely, that consisting of stones the centres of which are too low to be called bosses and are picked or furrowed with the chisel-pick. They are of various shapes and sizes, but they are nearly all comparatively small. On some of them the margin is of uniform width, and the centre correspondingly symmetrical; but in many cases the work is very carelessly done and the effect unsatisfactory. For specimens, see Pls. 8, 9, 22, 49.

The third and last general type of masonry to be discussed is that in which the whole face of the stone is on one level and is worked with the same tool in the same manner. Here, too, there is room for variety, and the various ways of finishing such stones are represented in the wall of Jerusalem.

The rudest form of dressing, if it be fair to call it a dressing, is seen in a very few stones with "the long irregular incisions at fairly regular intervals" which, according to Dickie,⁵⁵ are made by the quarry-pick. See Pl. 32.

Next come the stones, rather below the medium size, dressed with the chisel-pick. Dickie mentions them as found now and then among those with a combed dressing in the upper of the two walls unearthed by Bliss.⁵⁶ He also cites the upper courses at the Wailing Place as a part of the present wall where they are to be seen interspersed with combed specimens.⁵⁷ For others, see Pls. 6, 10, 23; also 37, 54.



Flat stones with a combed dressing, as above intimated, were more numerous in the old south wall than those with picked faces. This is also true of the present wall. Dickie mentions, besides the upper courses at the Wailing Place, the south wall of the Haram, "where the city wall projects from the mosque el-Aksa." See Pl. 13. He should have added the lower courses of large stones, in the same "south wall," from el-Aksa to the southwest corner. See Pl. 19. At first sight these large stones, like the smaller ones to which Dickie refers, look perfectly smooth, and many of them maintain this appearance, but if those toward the corner are carefully examined in the photograph with a glass, the marks of the comb-pick will

⁵⁵ Bliss, *Excavations*, 275.

⁵⁶ *Excavations*, 280.

⁵⁷ *Excavations*, 280 f.

become visible. The absence of such toolmarks on the rest is, of course, due to the action of the elements. These flat stones, it should be observed, though badly weathered, are not very ancient, having evidently been used to replace drafted stones like those shown in Pl. 17 when the wall was rebuilt after a pretty complete demolition. For two more flat ones, see Pl. 54.

Here belongs a kind of stones which, though not very numerous, have certain interesting peculiarities. They often occur singly, when they attract attention by their shape, thicker than it is wide, which gives one the impression that for some reason they were set on end. Their tooling, too, as one approaches, becomes noticeable. The marks are those of the *drove*, or *droving-iron*, a broad chisel worked with a wooden mallet, often, as in Pl. 48, applied in a diagonal direction, but sometimes perpendicularly. Sometimes, also, according to Dickie, "a toothed tool has been employed, which gives the furrowed effect with a combed detail."⁵⁸ On some of these stones there are interesting masons' marks: for example on one, with diagonal tooling,  on another with perpendicular toolmarks, 

and on a third, with a slightly raised center and diagonal tooling



Fair specimens of the commoner sort are found in Pl. 48. See also Pls. 23, 58. In the latter the toolmarks are unusually faint, probably because the building of which the stones are a relic, a Crusading structure, was destroyed by fire.

Finally, there are the flat stones with perfectly smooth faces. They are of all sizes, and they are found in numbers in various parts of the wall. Wilson says of the section beginning about fifty feet south of the Golden Gate, "Southwards from the postern the stones all have plain chiseled faces." In my own notes I find the entry, "Beyond the first angle there is now and then a drafted stone with a picked centre, or a flat one with diagonal tooling; but most of the work has a plain finish. For a distance there are a few with rough faces mixed with projecting columns near the ground. Finally, there are only large plain stones at the bottom nearly as far as Mohammed's Pillar, just north of which there are three from 5 to 6 feet long and 3 feet thick." The plain finish is also found on and about some of the gates. See Pls. 22, 30, 36.

⁵⁸ Bliss, *Excavations*, 281.

THE MODERN WALL OF JERUSALEM

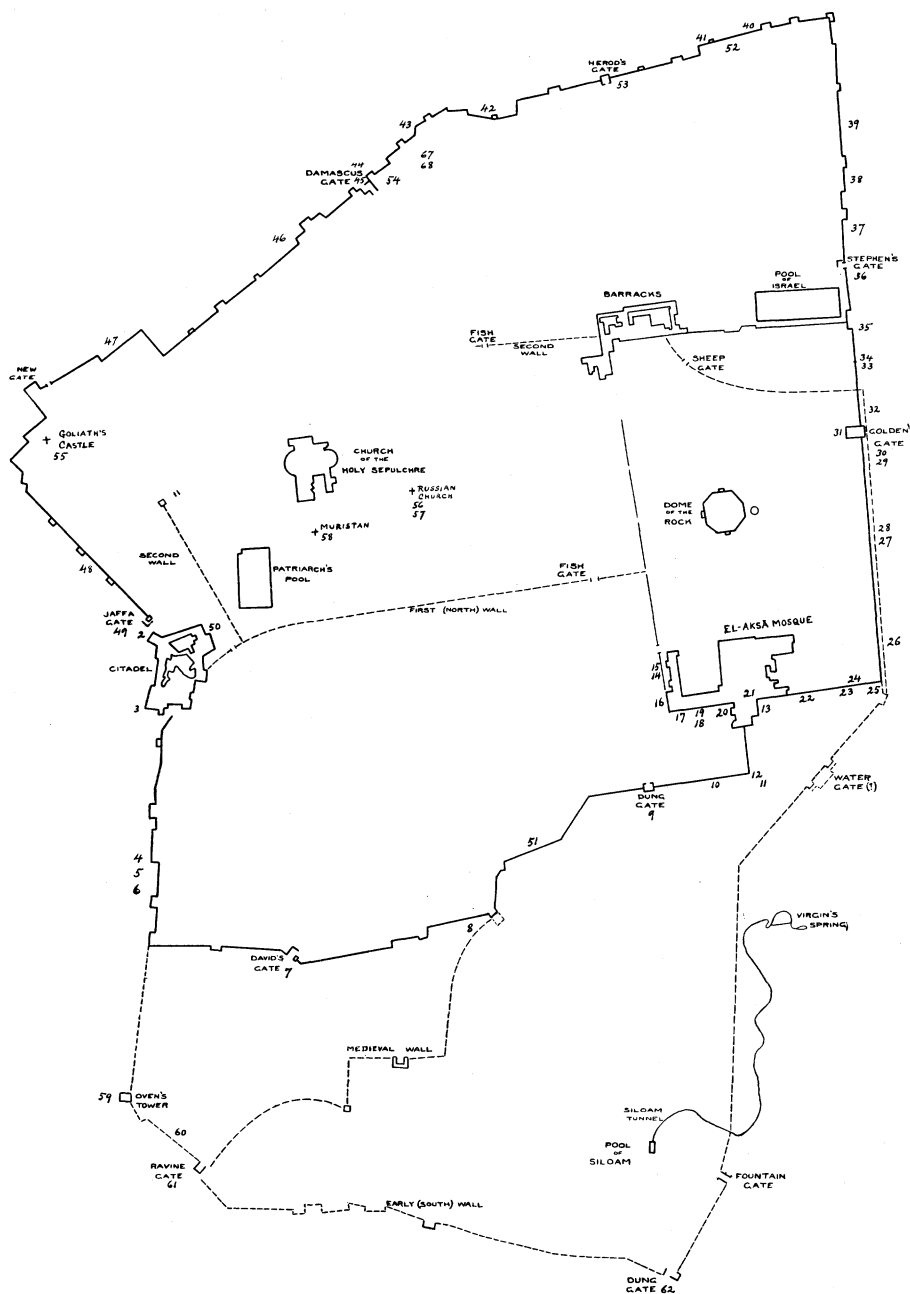


Plate 1. An Outline Map indicating the Courses taken by the Wall and the points pictured in the Plates.

THE MODERN WALL OF JERUSALEM

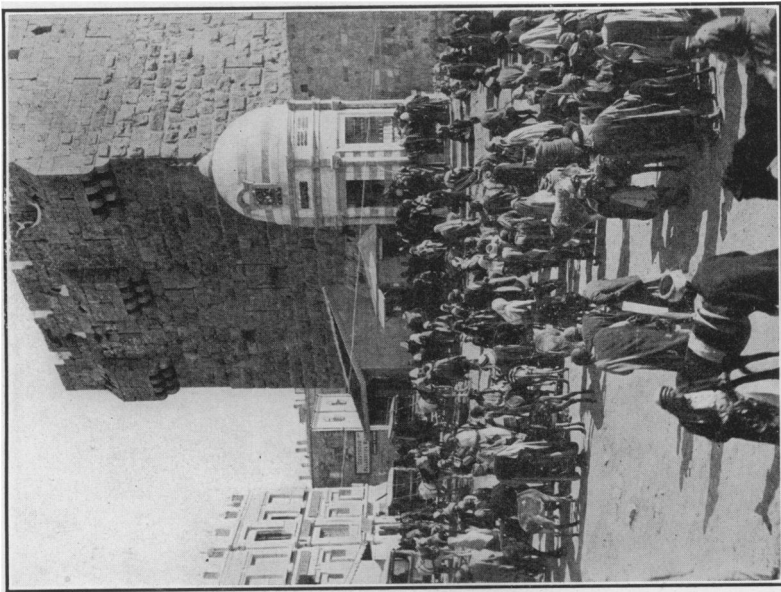


Plate 2. The Western Entrance; The Northwest Tower of the Citadel.

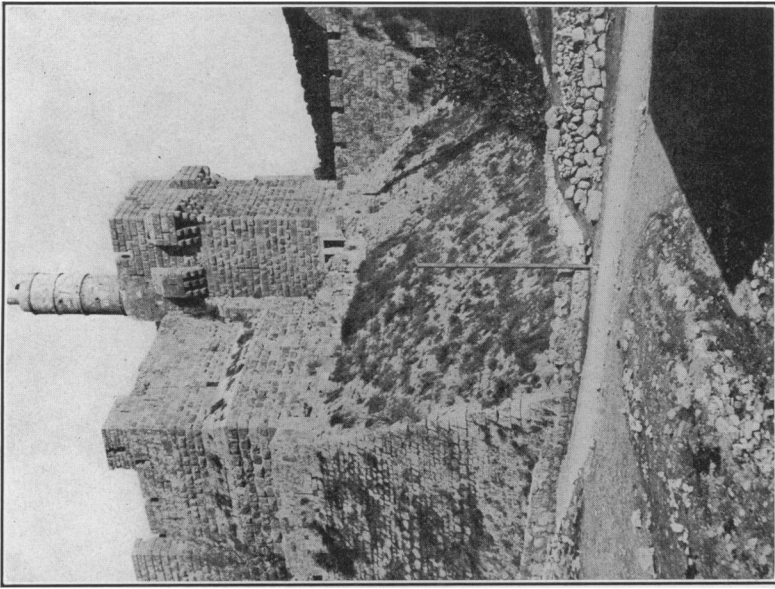


Plate 3. The Citadel from the Southwest.

THE MODERN WALL OF JERUSALEM

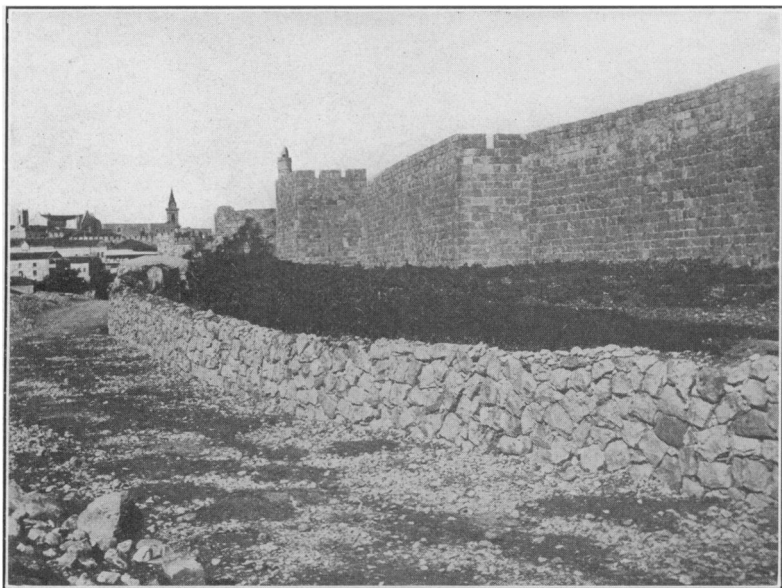


Plate 4. The West Wall South of the Citadel.

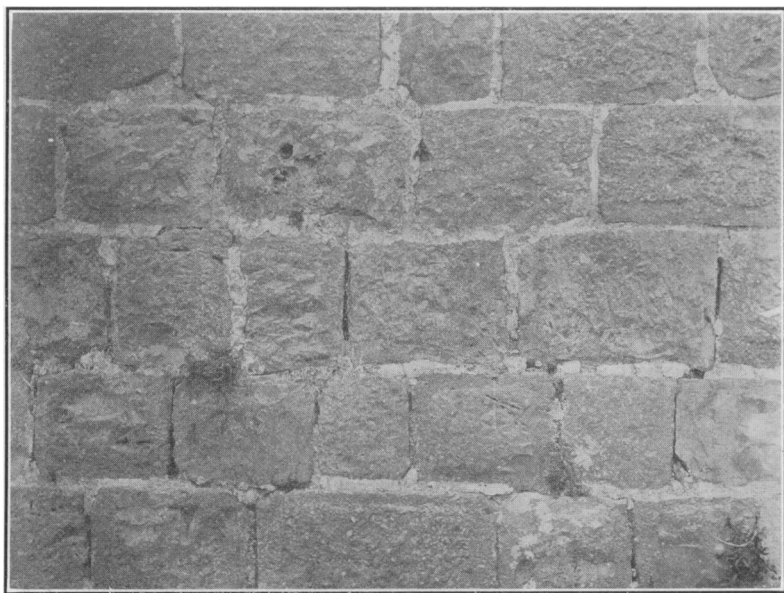


Plate 5. The West Wall South of the Citadel; Detail.

THE MODERN WALL OF JERUSALEM



Plate 6. The West Wall South of the Citadel; Detail.



Plate 7. David's Gate or The Zion Gate.

THE MODERN WALL OF JERUSALEM

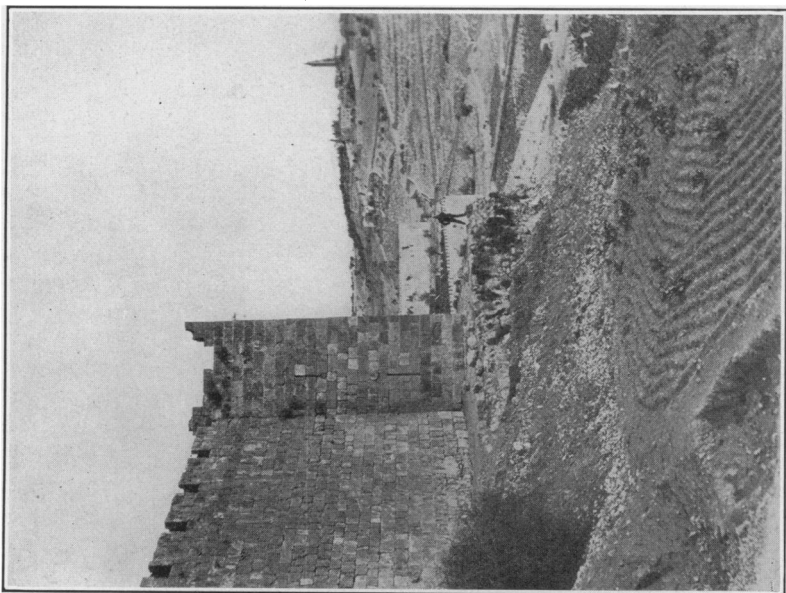


Plate 8. Burj Kibrit. (Sulphur Tower.)

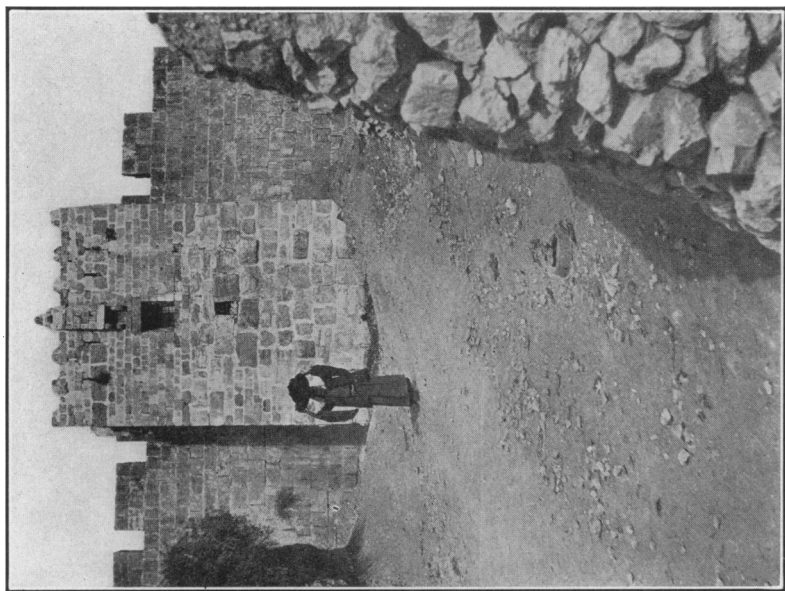


Plate 9. The Dung Gate.

THE MODERN WALL OF JERUSALEM

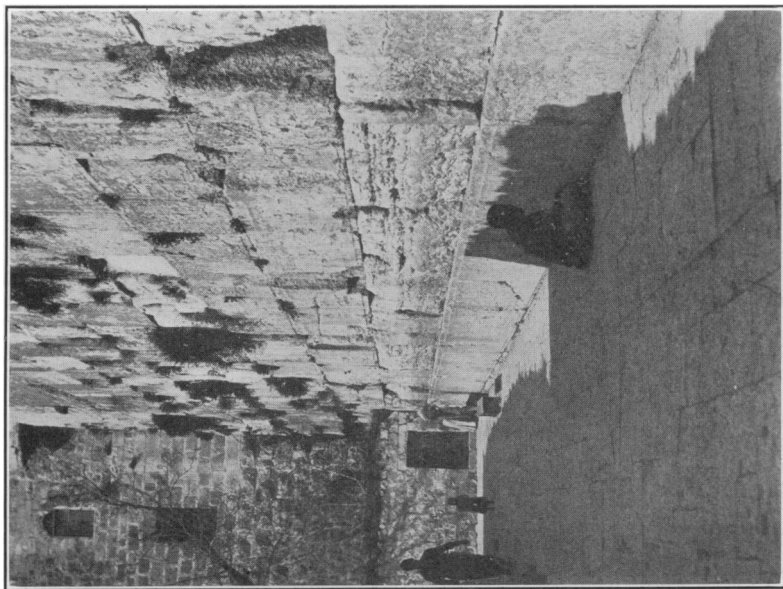


Plate 14. The Jewish Wailing Place.

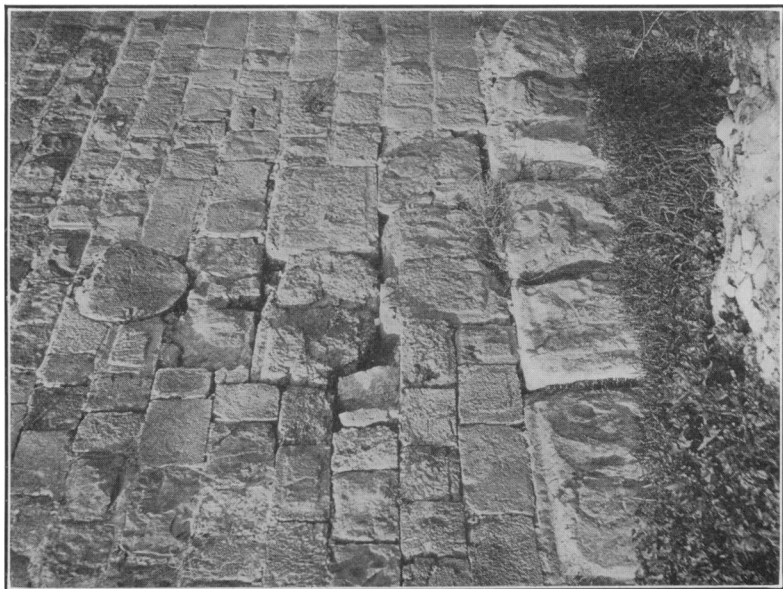


Plate 10. The South Wall, East of the Dung Gate.

THE MODERN WALL OF JERUSALEM

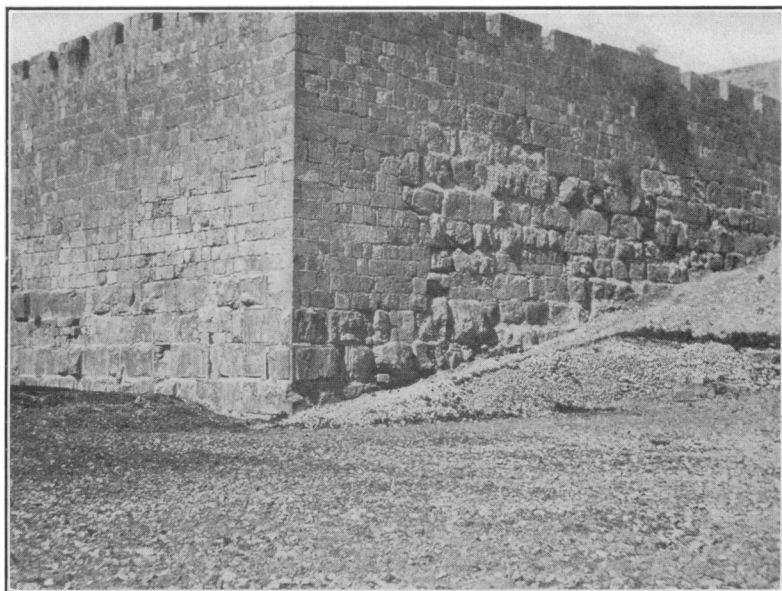


Plate 11. The Southeast Corner of the City.



Plate 12. The Southeast Corner of the City; Detail.

THE MODERN WALL OF JERUSALEM

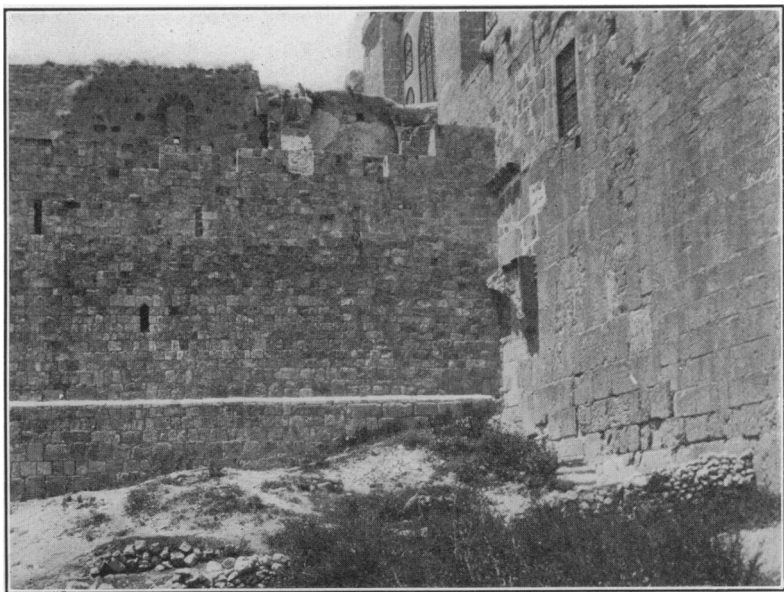


Plate 13. The Double Gate, in the Haram Wall where the City Wall abuts upon it.



Plate 22. The Triple Gate.

THE MODERN WALL OF JERUSALEM

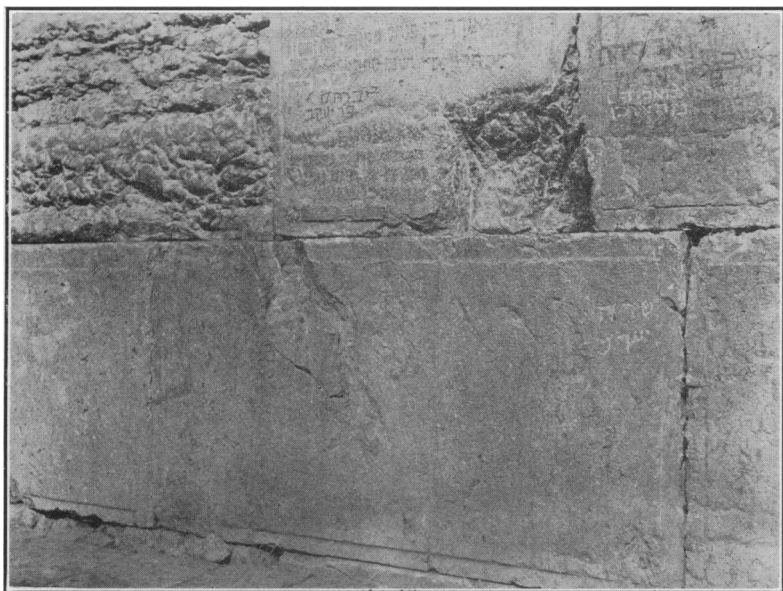


Plate 15. The Jewish Wailing Place; Detail.

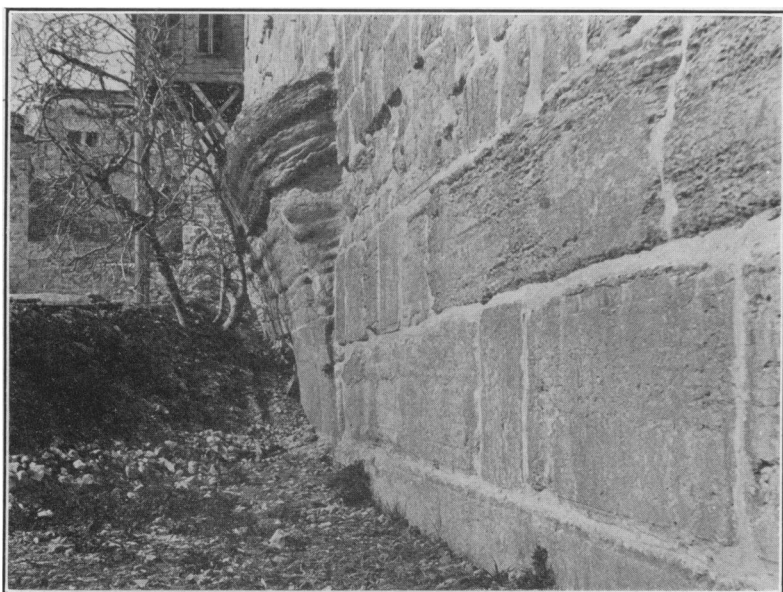


Plate 16. Robinson's Arch.

THE MODERN WALL OF JERUSALEM



Plate 17. The South Wall of the Haram, near the Western End.

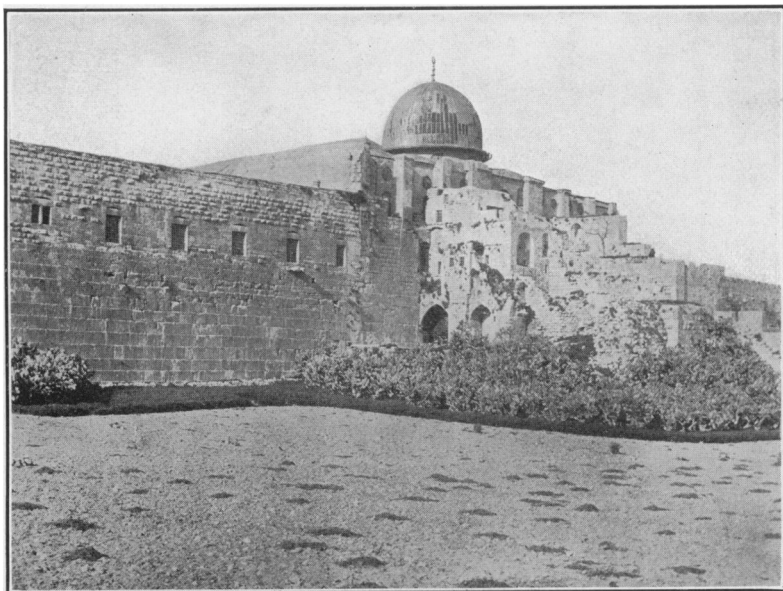


Plate 18. The South Wall of the Haram, West of el-Aksa.

THE MODERN WALL OF JERUSALEM

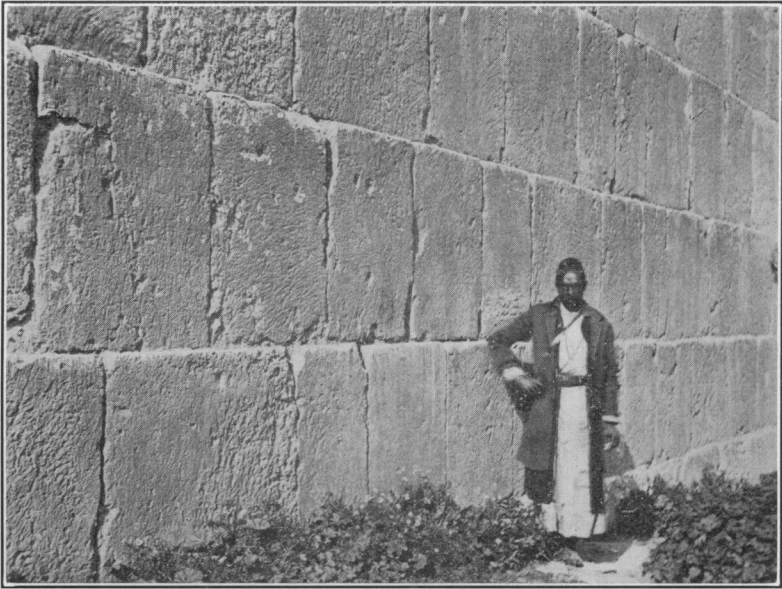


Plate 19. The South Wall of the Haram, West of el-Aksa; Detail.

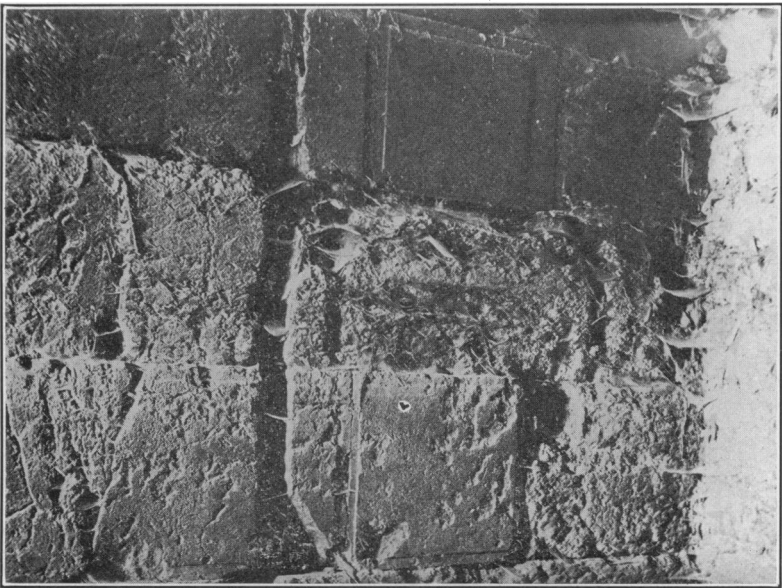


Plate 20. The South Wall of the Haram, West of the Double Gate.

THE MODERN WALL OF JERUSALEM

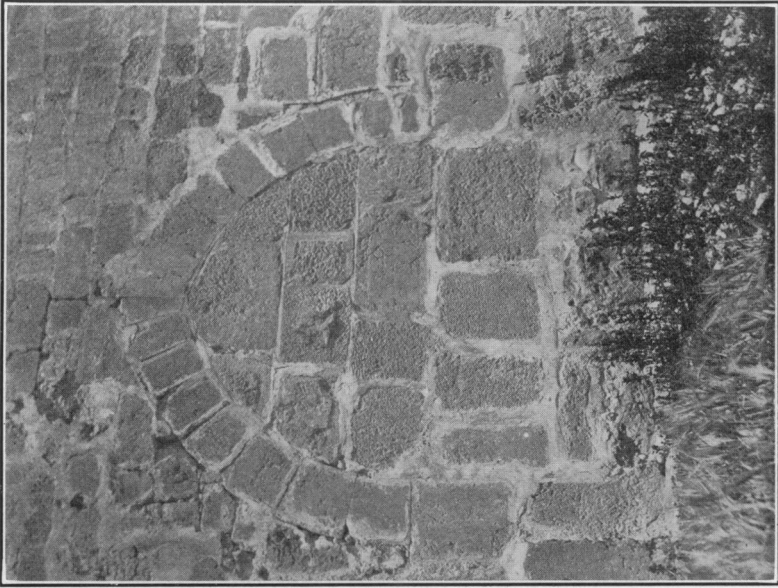


Plate 23. The Single Gate.

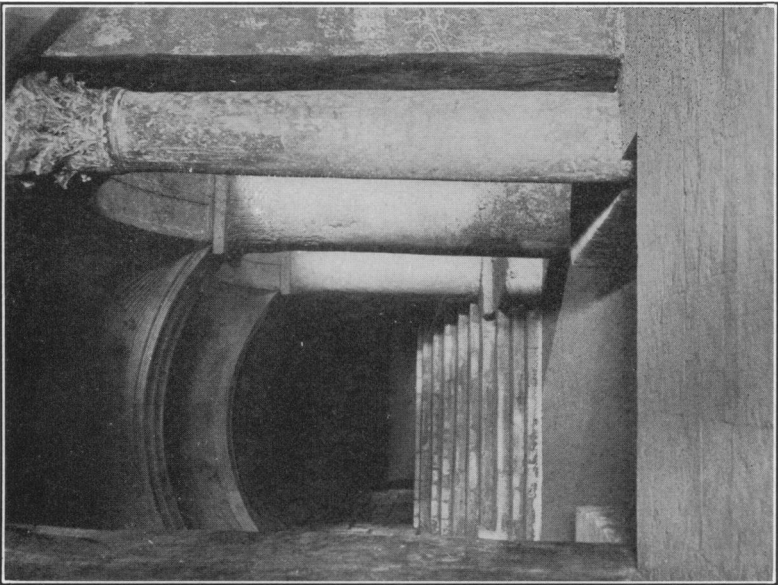


Plate 21. The Double Gate, Inside.

THE MODERN WALL OF JERUSALEM

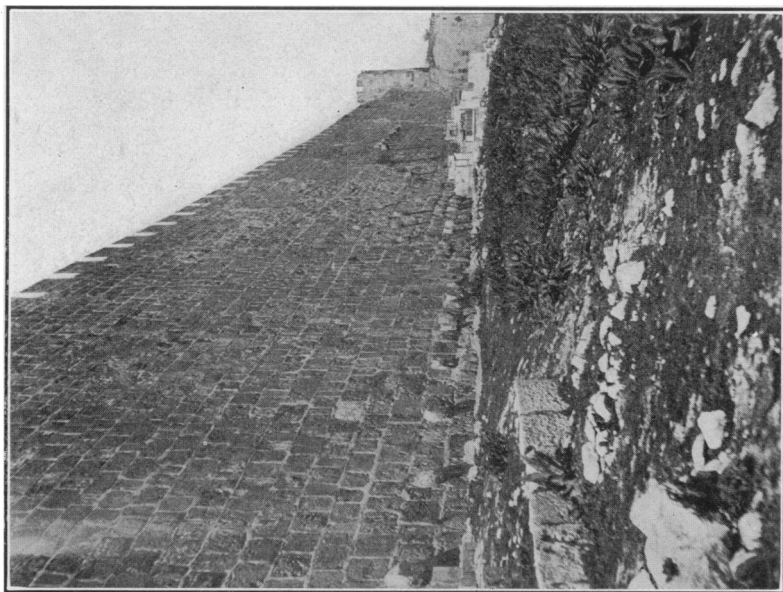


Plate 27. The East Wall of the Haram, South of the Golden Gate.

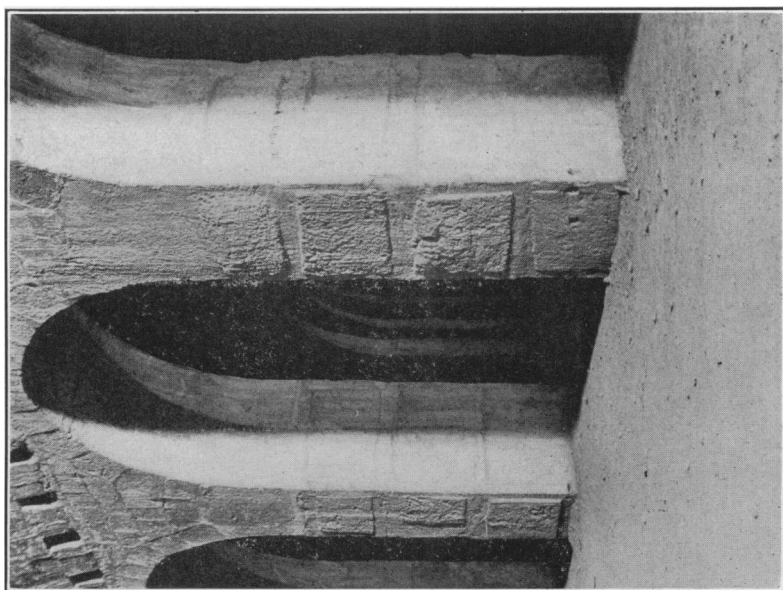


Plate 24. Solomon's Stables.

THE MODERN WALL OF JERUSALEM

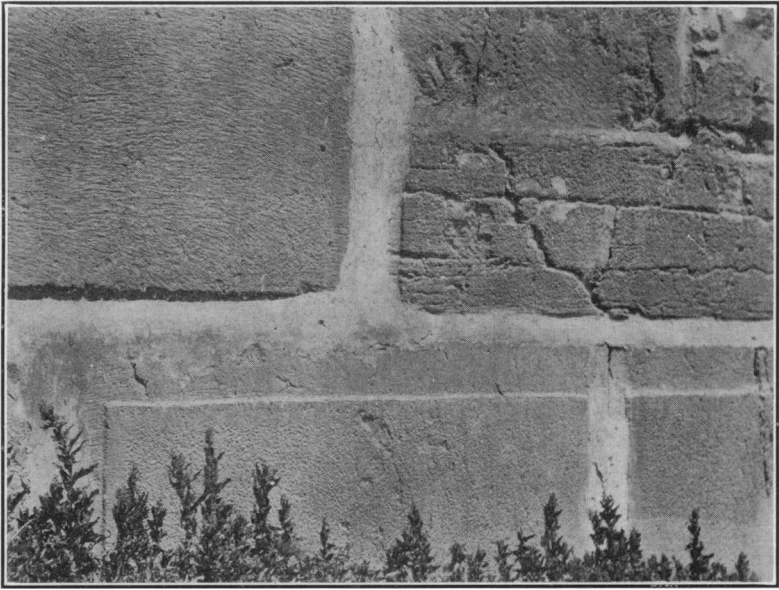


Plate 25. The South Wall of the Haram, near the Southeast Corner.

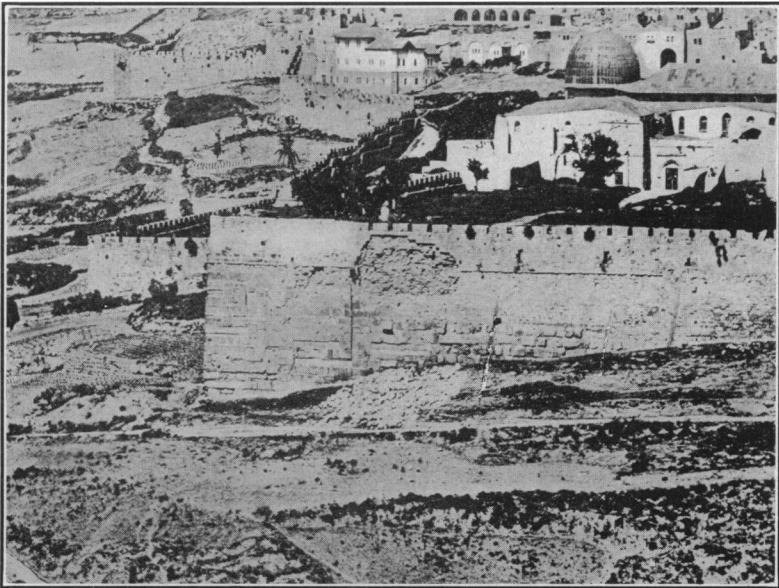


Plate 26. A Patch of Exposed Rubble.

THE MODERN WALL OF JERUSALEM



Plate 28. The East Wall of the Haram, South of the Golden Gate;
Detail.

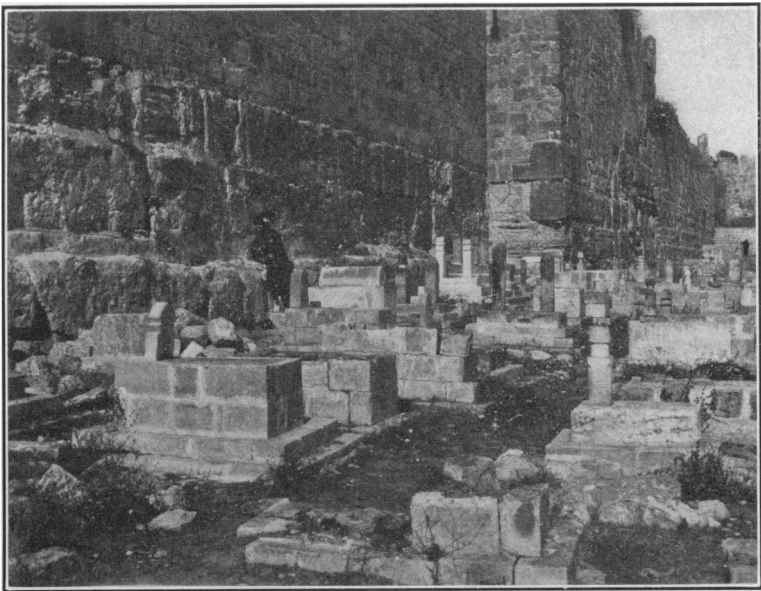


Plate 33. The East Wall of the Haram, just South of the
Northeast Tower.

THE MODERN WALL OF JERUSALEM

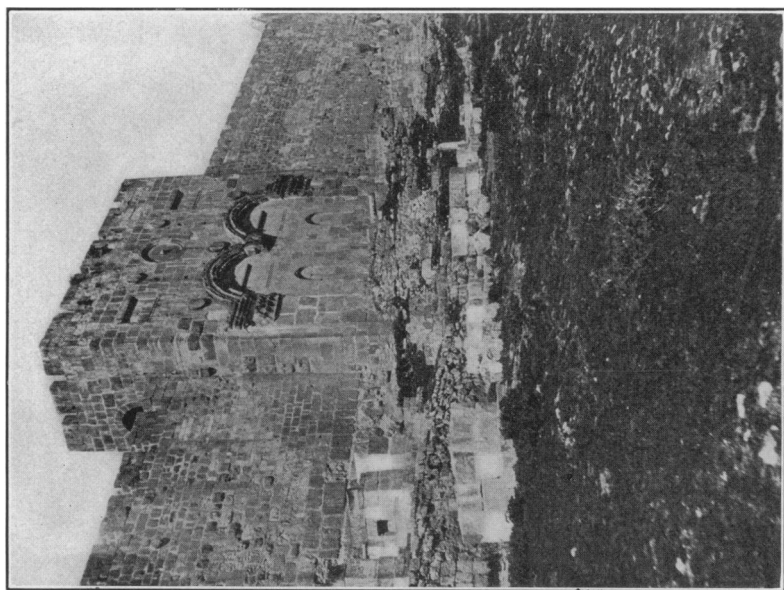


Plate 30. The Golden Gate.

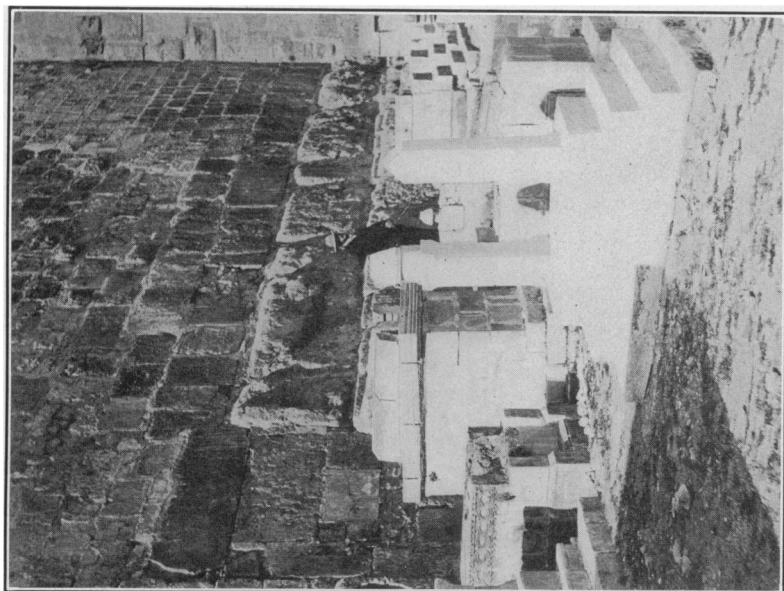


Plate 29. The East Wall of the Haram, just South of the Golden Gate.

THE MODERN WALL OF JERUSALEM



Plate 32. The East Wall of the Haram, North of the Golden Gate.

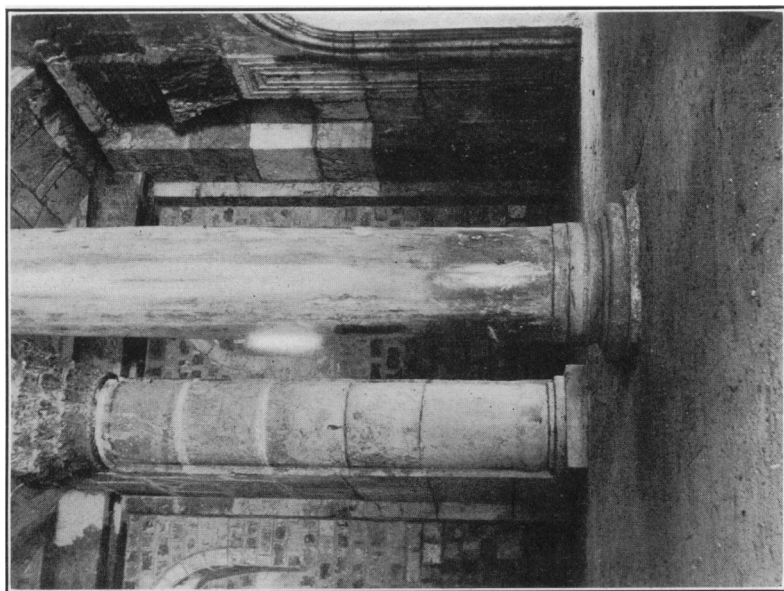


Plate 31. The Golden Gate, Inside.

THE MODERN WALL OF JERUSALEM

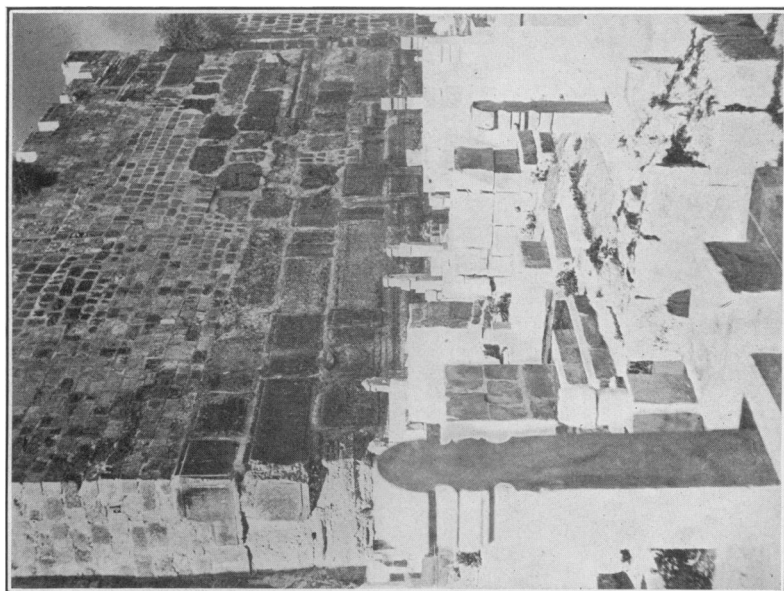


Plate 34. The East Wall of the Haram; the Tower
at the Northeast Corner.

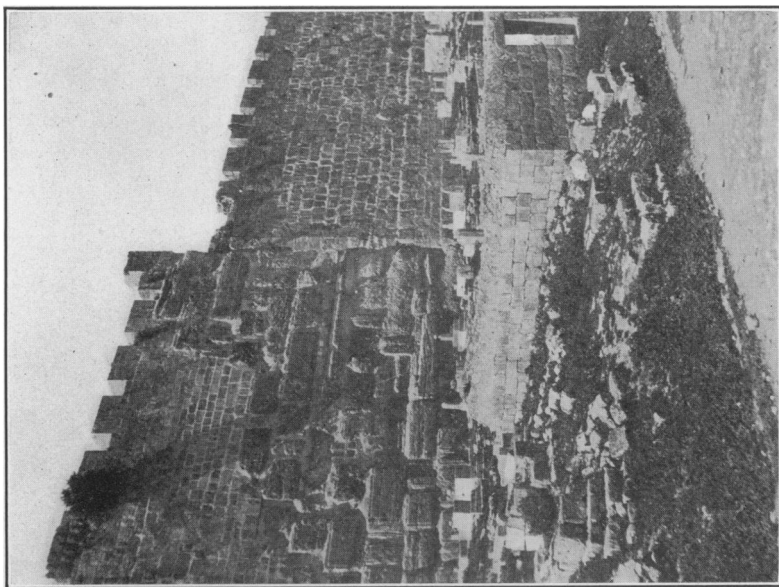


Plate 35. The Northeast Corner of the Haram and
Beyond.

THE MODERN WALL OF JERUSALEM

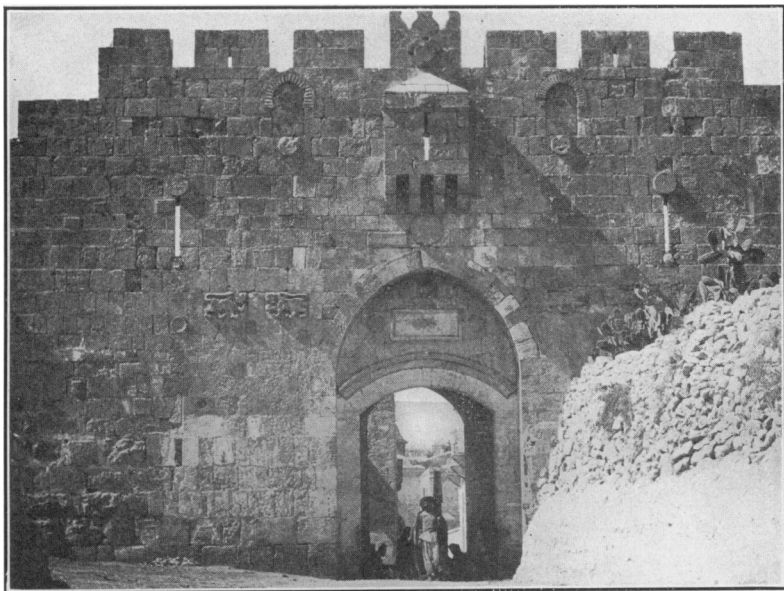


Plate 36. Stephen's Gate.

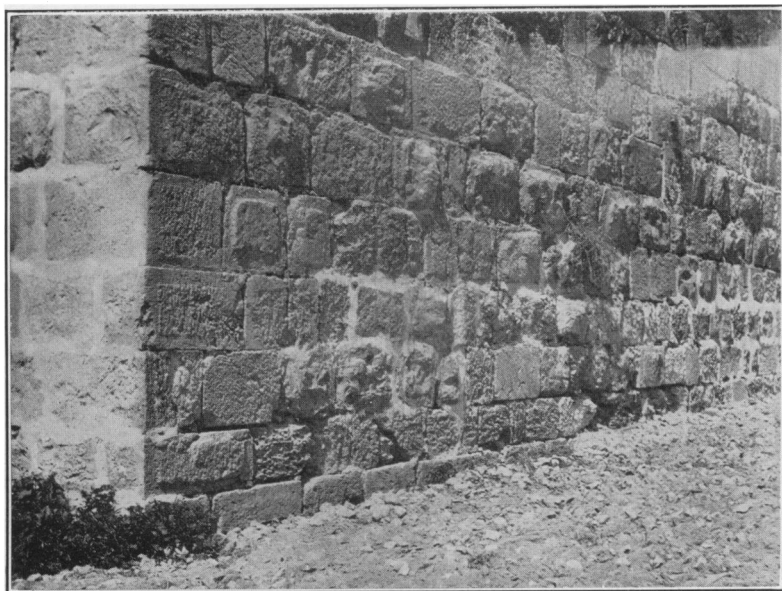


Plate 37. The East Wall, just North of Stephen's Gate.

THE MODERN WALL OF JERUSALEM

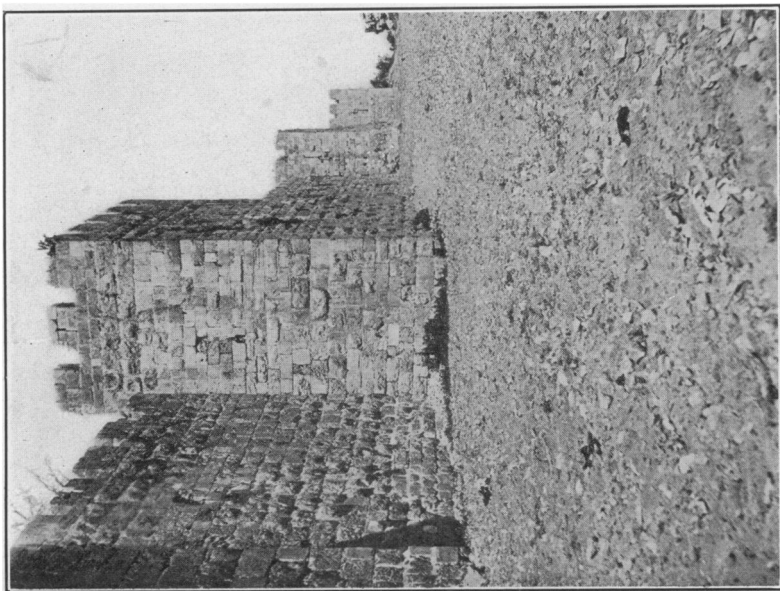


Plate 38. The East Wall, toward the Northeast Corner.

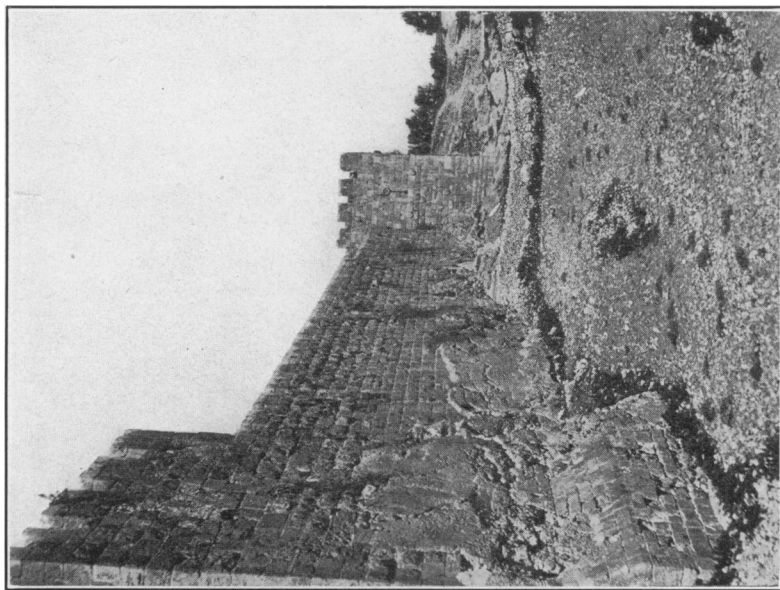


Plate 39. The East Wall, near the Northeast Corner.

THE MODERN WALL OF JERUSALEM

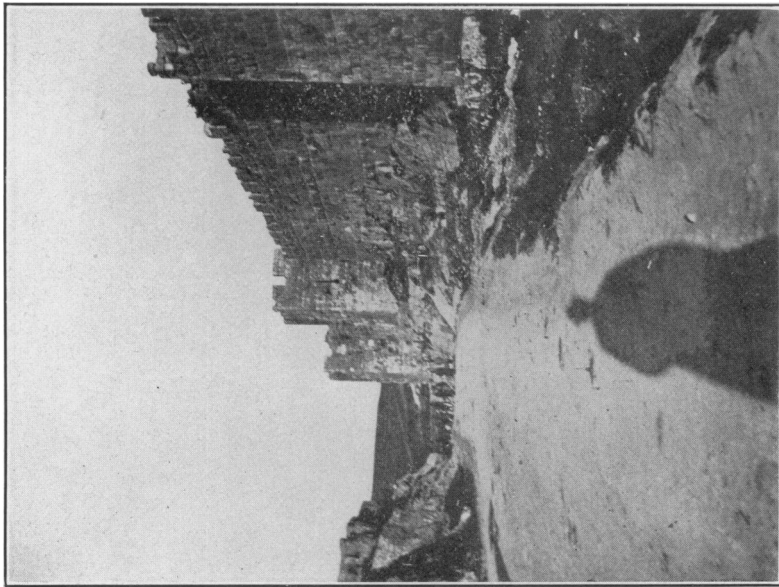


Plate 40. The North Wall, toward the Northeast Corner.

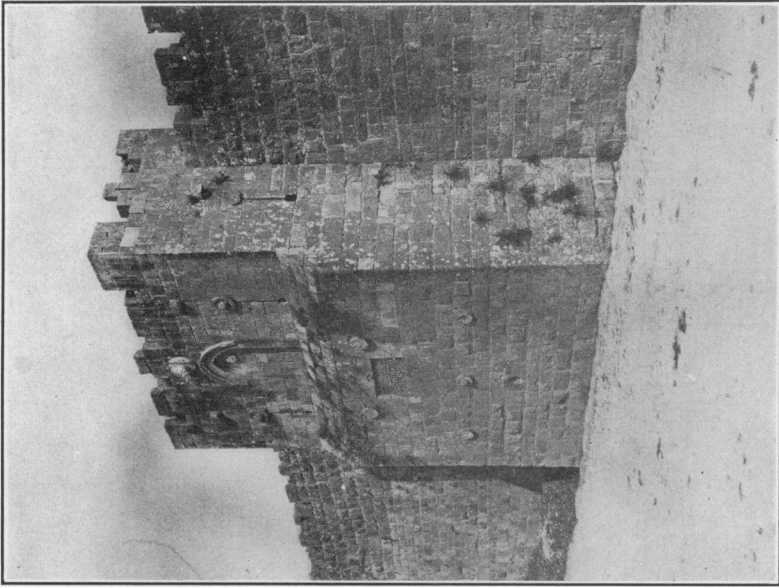


Plate 41. The North Wall, the Third Tower East of Herod's Gate.

THE MODERN WALL OF JERUSALEM

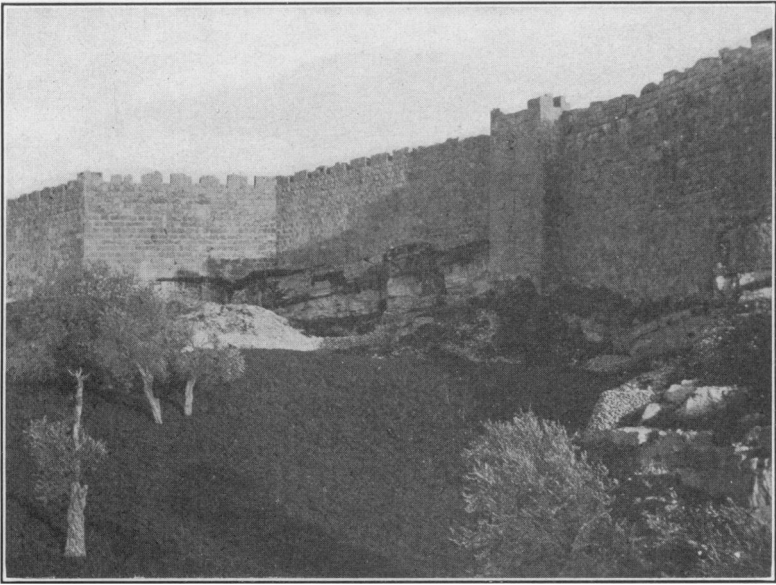


Plate 42. The North Wall, West of Herod's Gate.

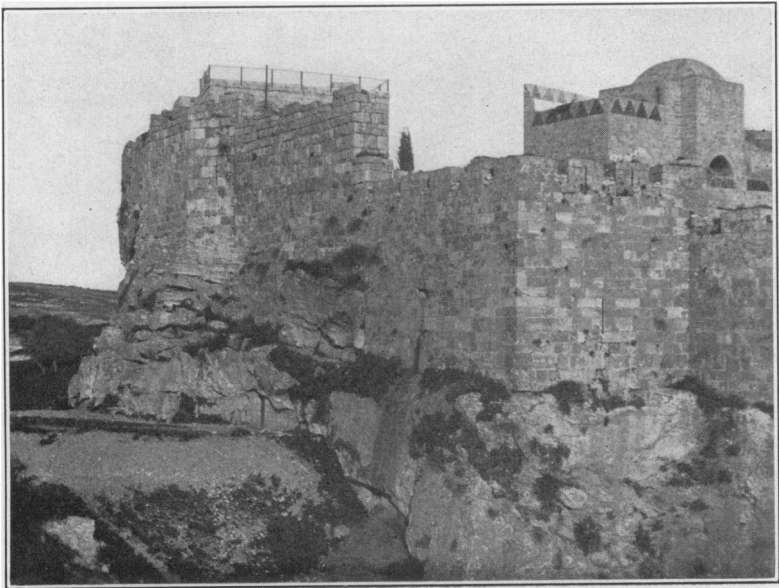


Plate 43. The North Wall, over the Cotton Grotto.

THE MODERN WALL OF JERUSALEM



Plate 44. The Damascus Gate.



Plate 45. The Damascus Gate; Detail.

THE MODERN WALL OF JERUSALEM

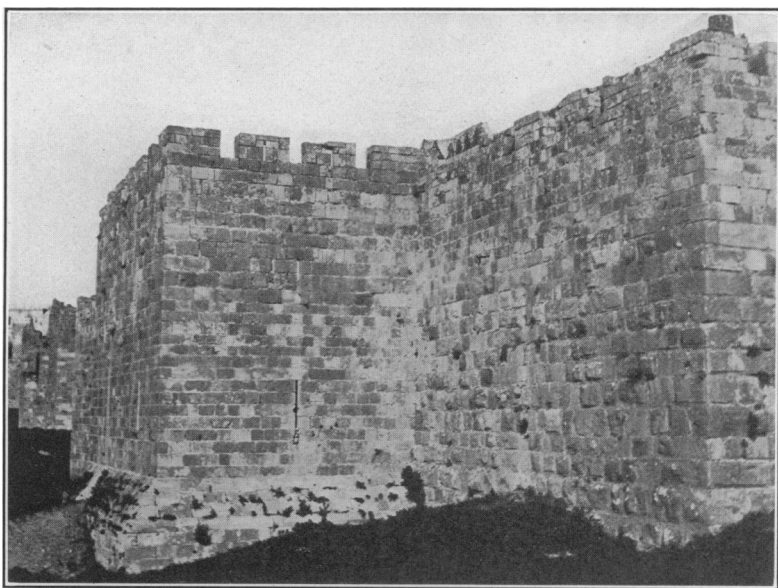


Plate 46. The North Wall, West of the Damascus Gate.

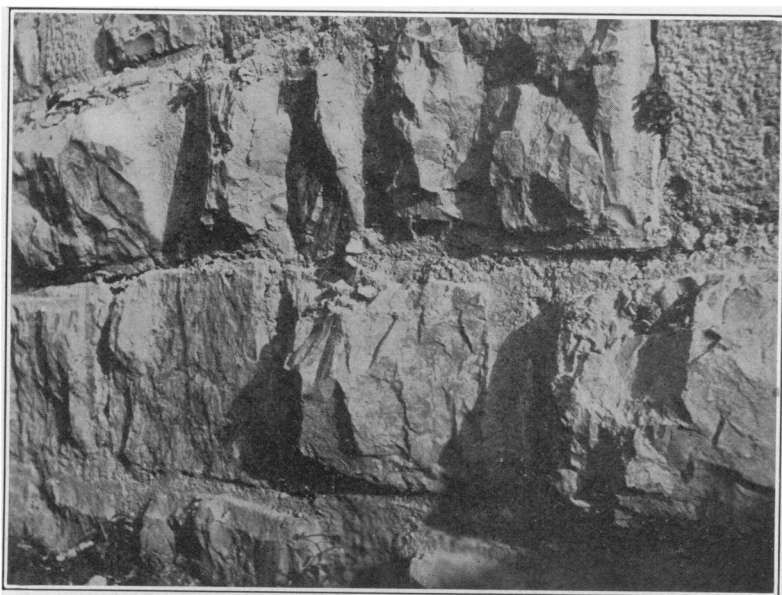


Plate 47. The North Wall, East of the New Gate.

THE MODERN WALL OF JERUSALEM

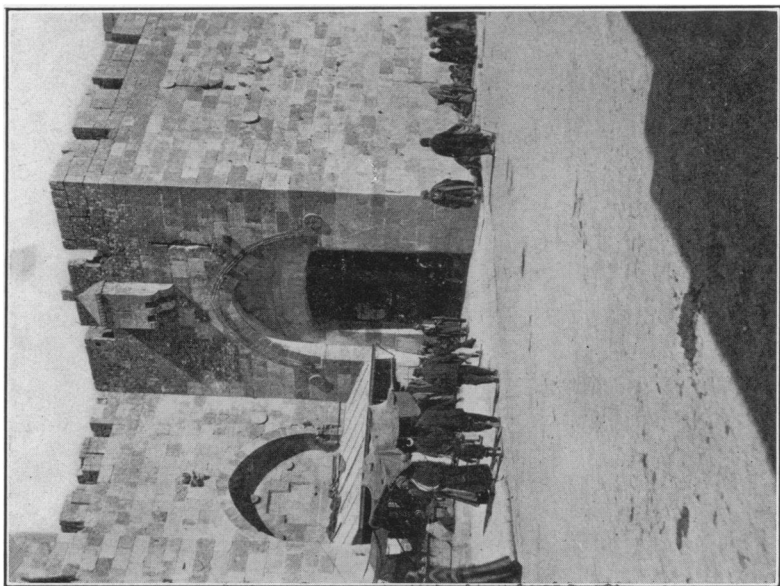


Plate 49. The Jaffa Gate.



Plate 48. The West Wall, North of the Jaffa Gate.

THE MODERN WALL OF JERUSALEM

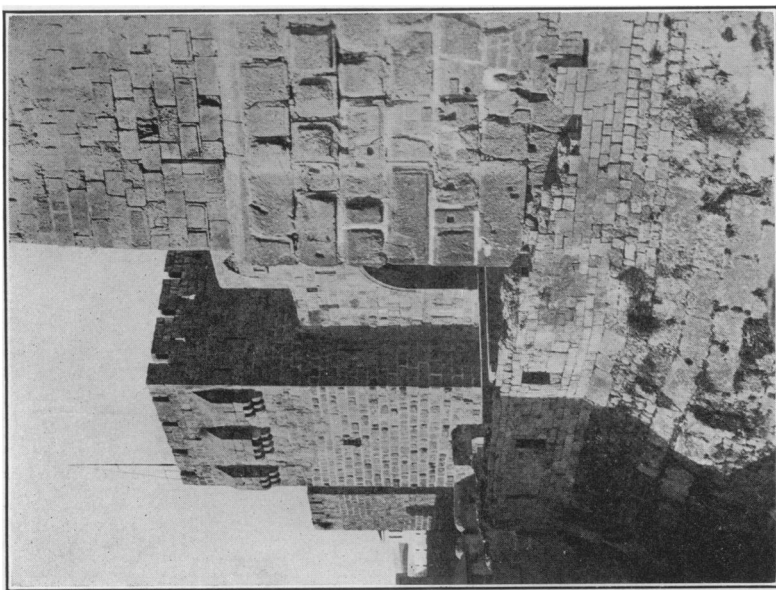


Plate 50. The Tower of David.

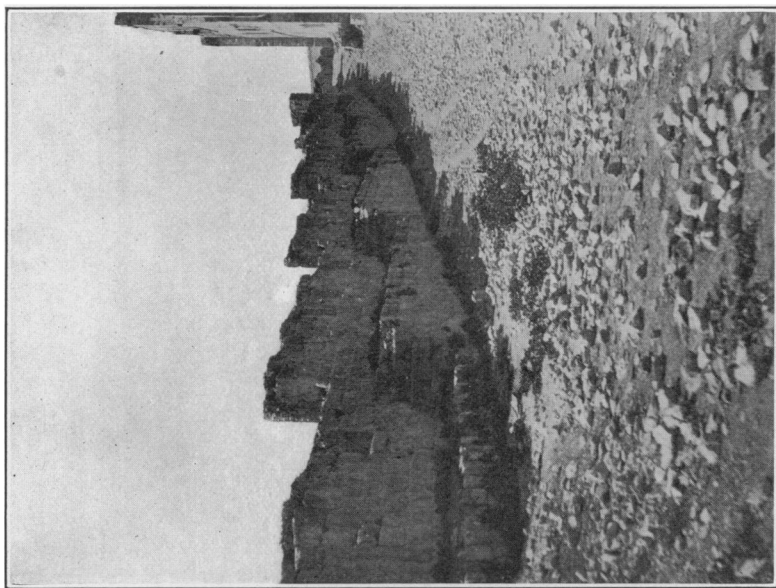


Plate 51. The South Wall, Inside, East of David's Gate.

THE MODERN WALL OF JERUSALEM

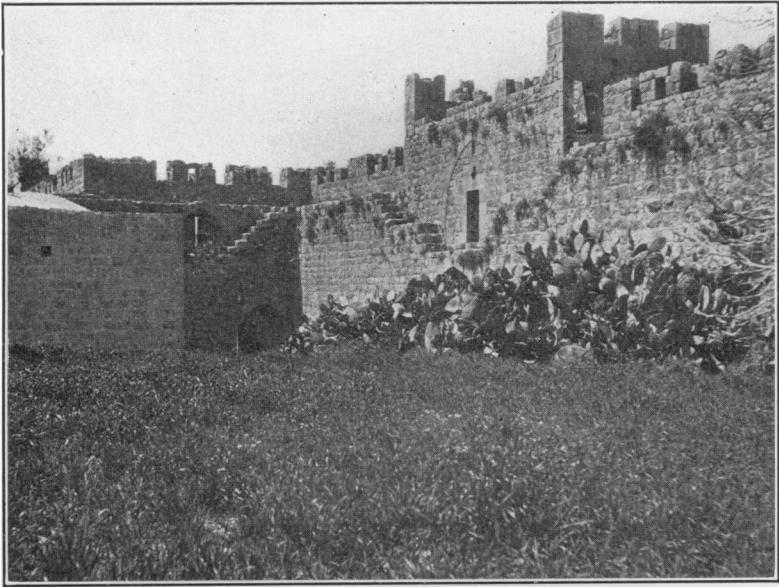


Plate 52. The Northeast Corner of the City, Inside.



Plate 54. The North Wall, Inside, just East of the Damascus Gate.

THE MODERN WALL OF JERUSALEM



Plate 55. The Castle of Goliath.

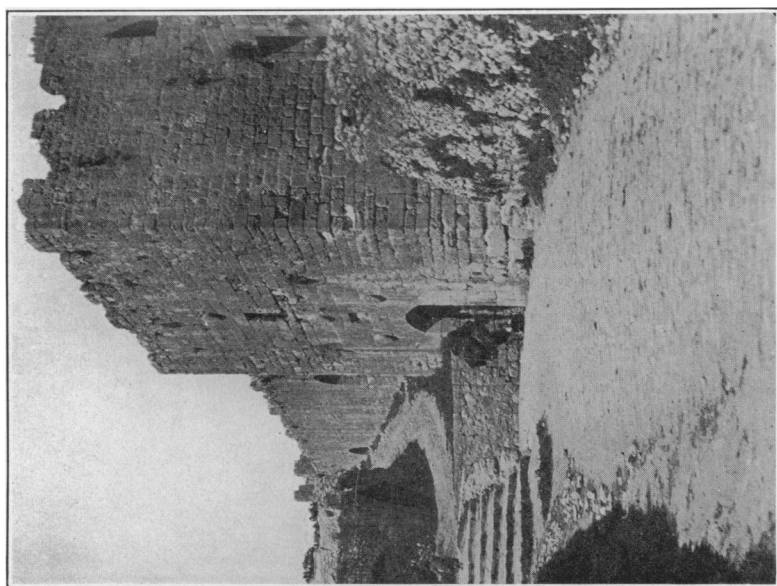


Plate 53. Herod's Gate, Inside.

THE MODERN WALL OF JERUSALEM

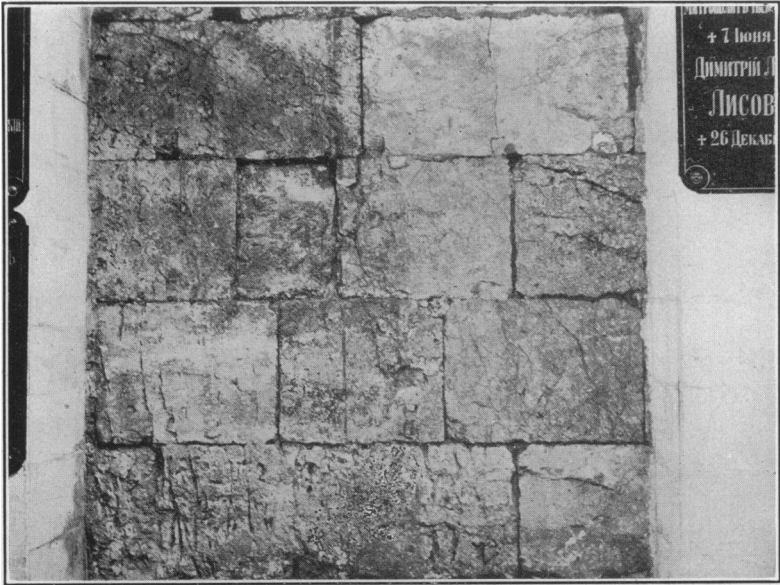


Plate 56. Remains of an Ancient Church, East of the Church of the Sepulchre.



Plate 57. Remains of an Ancient Church, East of the Church of the Sepulchre.

THE MODERN WALL OF JERUSALEM

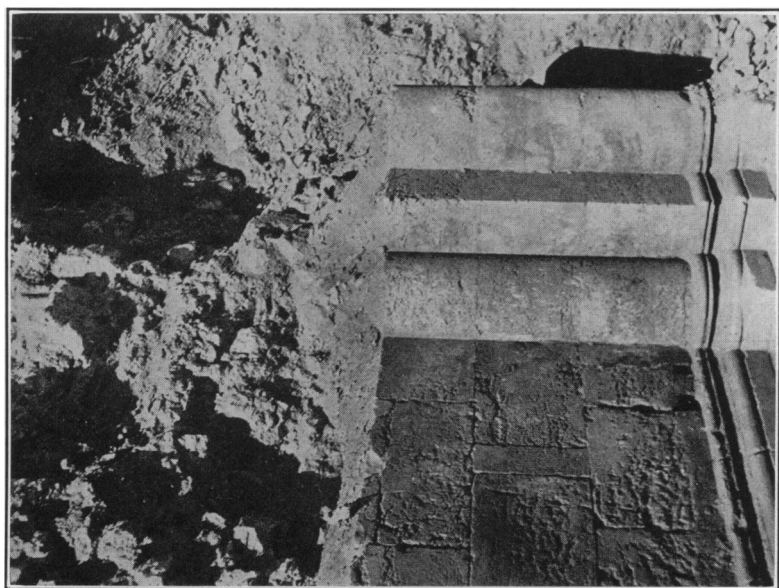


Plate 58. Remains of Crusading Architecture in the Muristan.

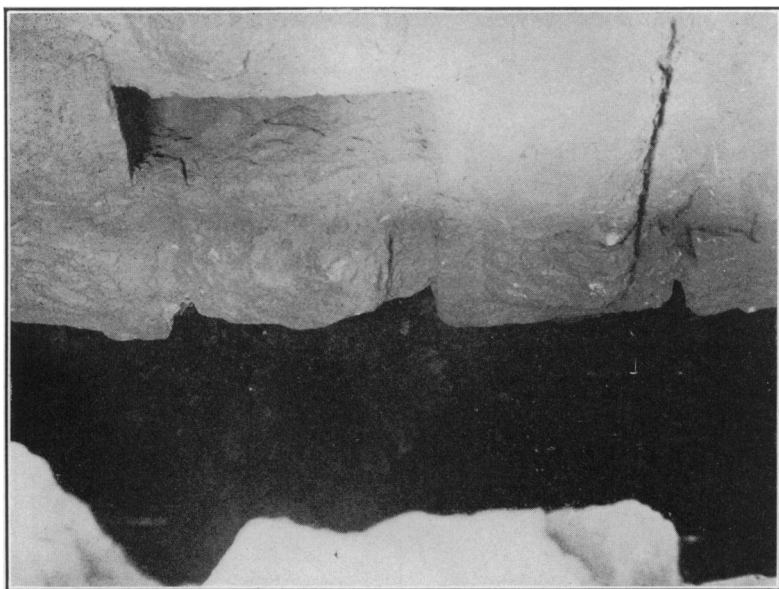


Plate 62. Remains of a Tower at the Southeast Corner of the Ancient City.

THE MODERN WALL OF JERUSALEM

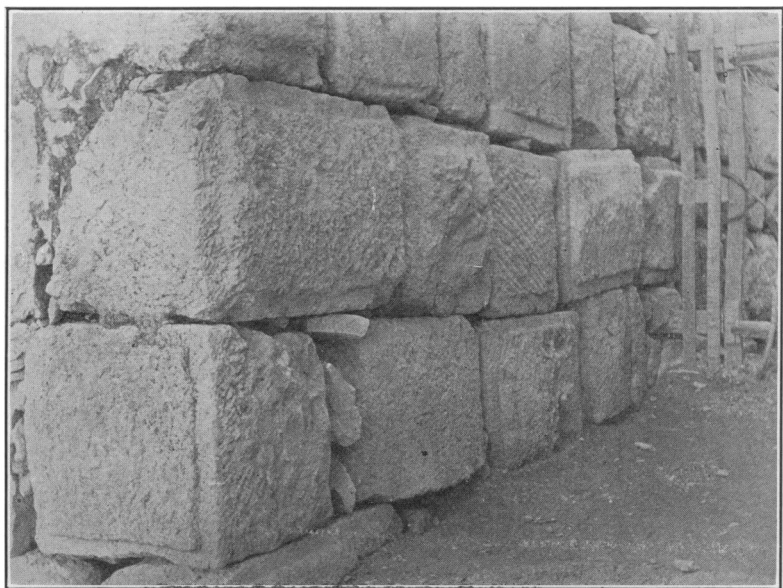


Plate 59. Stones Excavated on the Site of the English School.

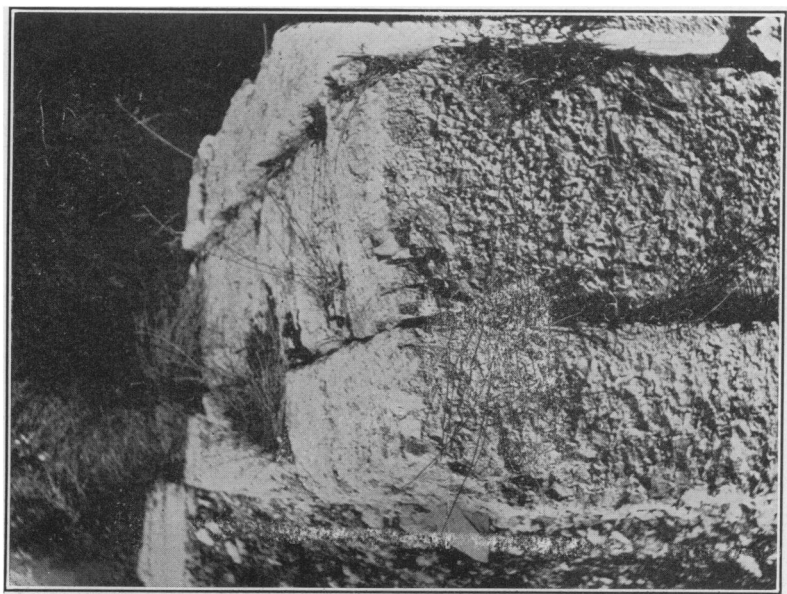


Plate 60. Remains of a Wall on Maudslay's Scarp.

THE MODERN WALL OF JERUSALEM



Plate 61. Remains of a Tower East of the Protestant Cemetery.



Plate 63. Remains of a Building at Kaloniyeh.

THE MODERN WALL OF JERUSALEM

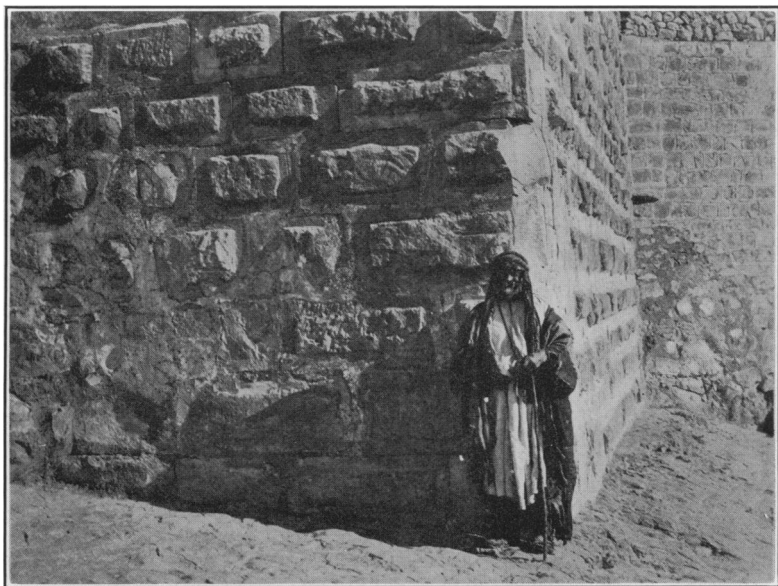


Plate 64. A Wall in the Monastery at Mar Saba.

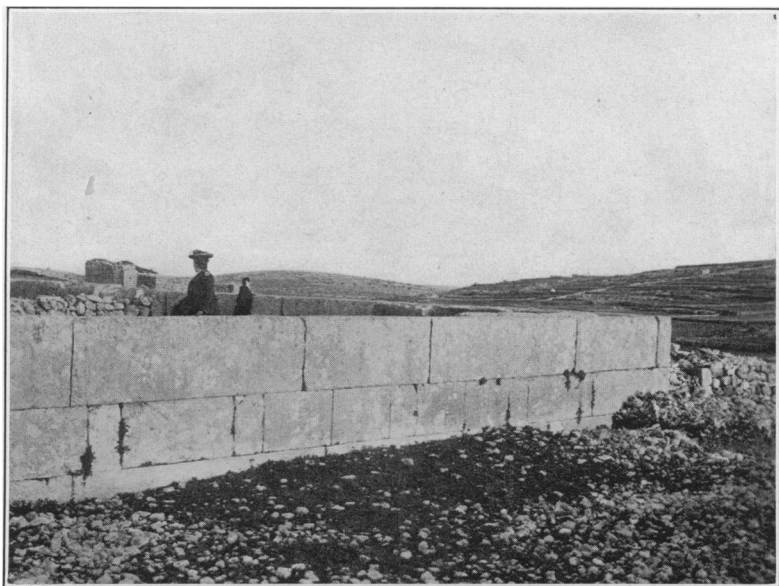


Plate 65. An Unfinished Structure at Ramet el-Halil.

THE MODERN WALL OF JERUSALEM

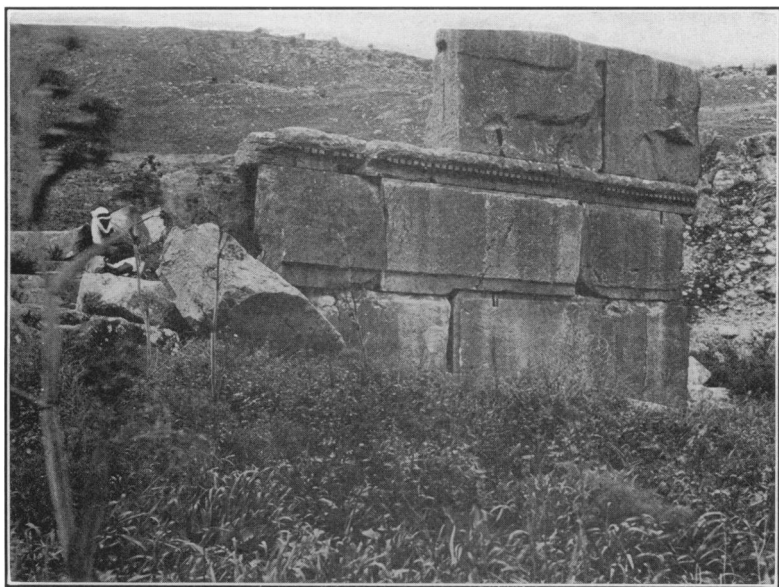


Plate 66. The Palace of Hyrcanus at Arak el-Emir.

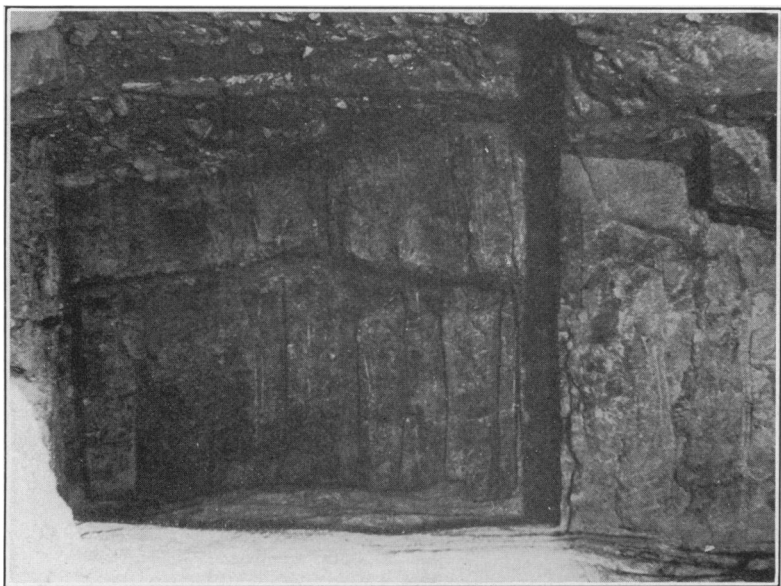


Plate 67. The Cotton Grotto.

THE MODERN WALL OF JERUSALEM



Plate 68. The Cotton Grotto.



Plate 70. A Winepress in a Quarry, Northwest of Jerusalem.

THE MODERN WALL OF JERUSALEM

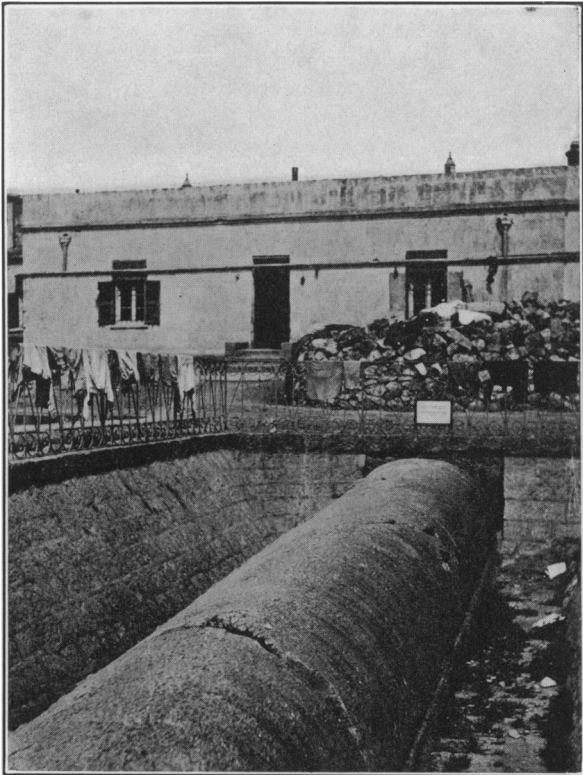


Plate 69. An Abandoned Column.

THE MODERN WALL OF JERUSALEM



Plate 71. Stonecutters at Ramallah.